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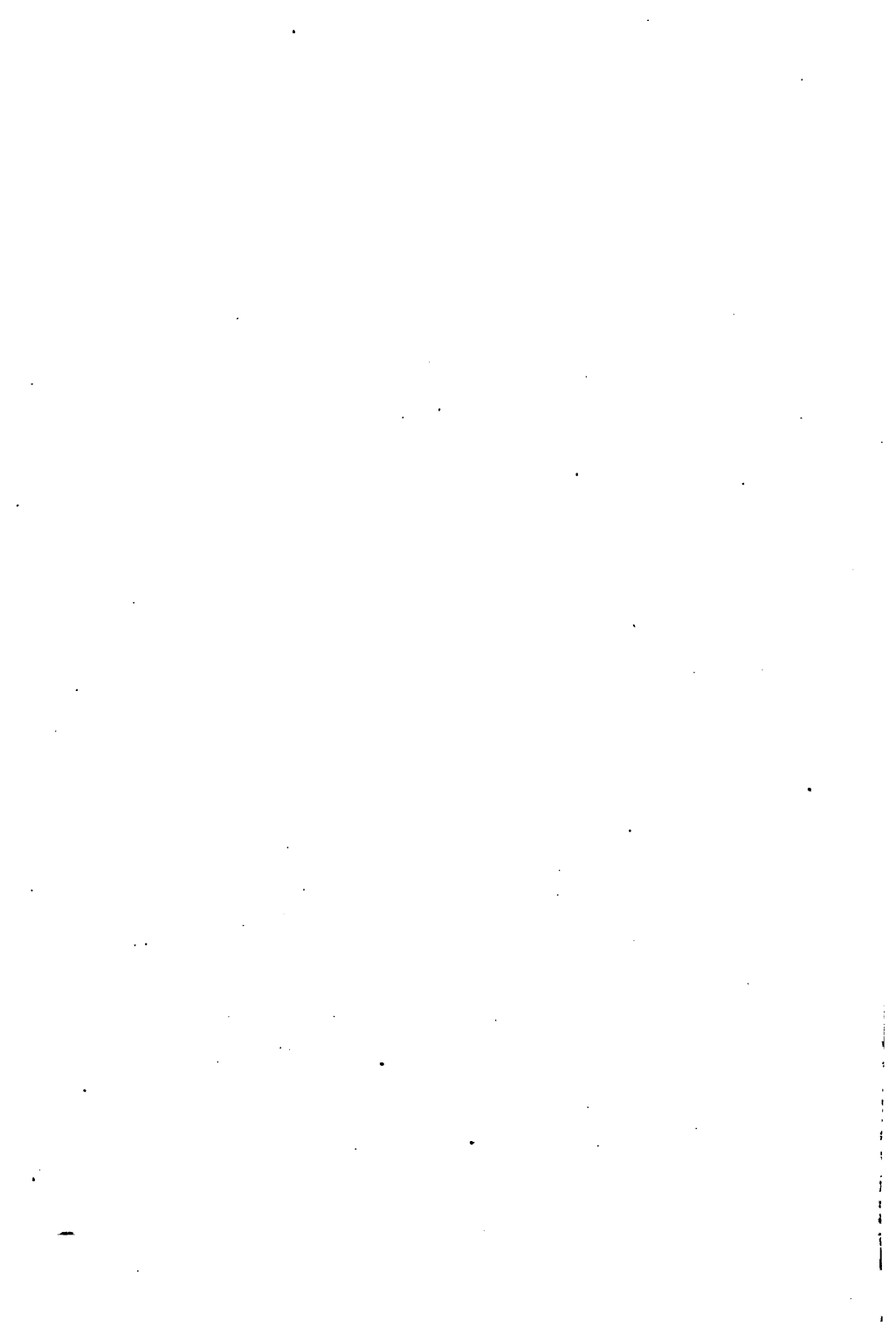
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PREFACE.

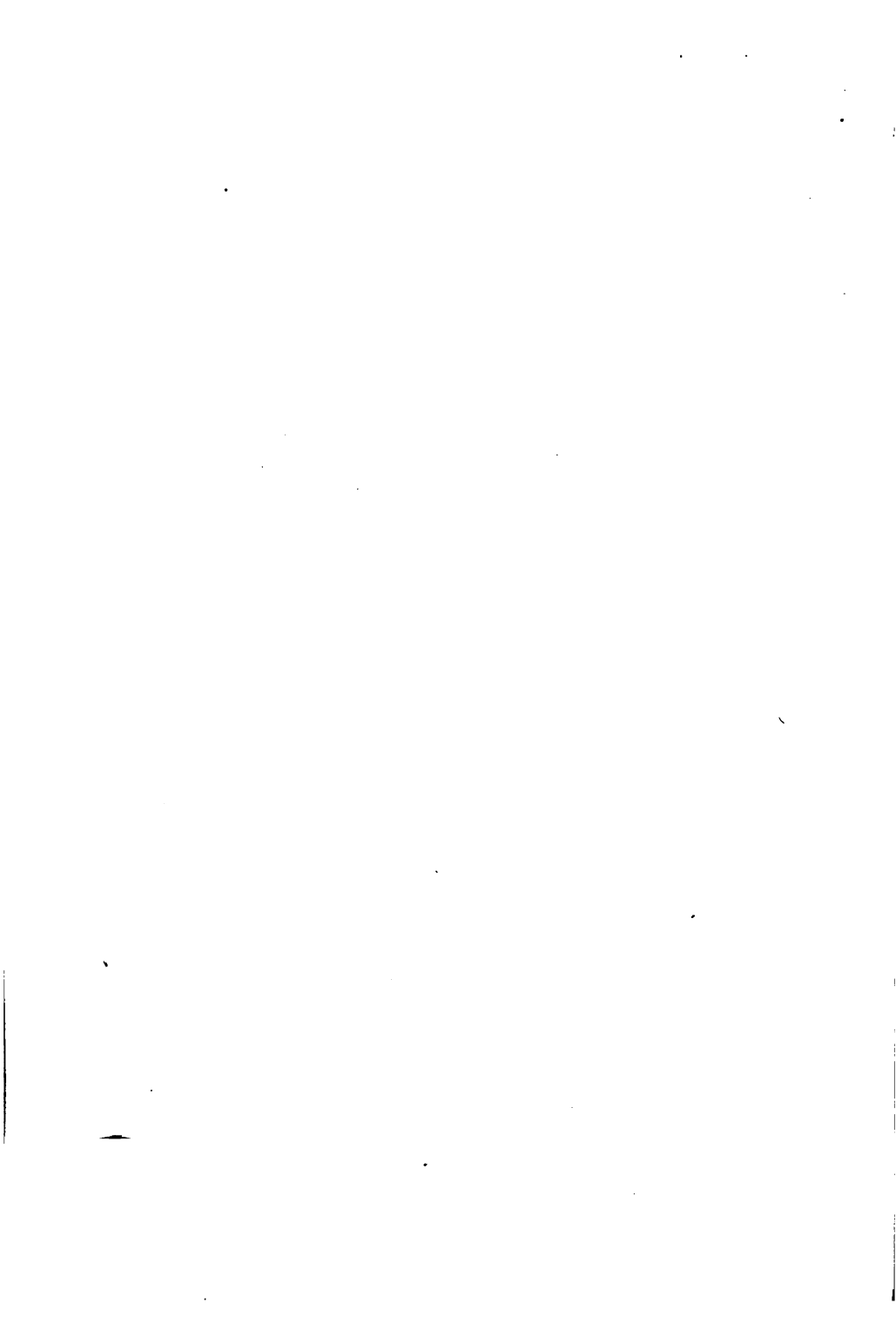
REPEATED inquiries for reprints of these essays, addresses and lectures, most of which have long been "out of print," have seemed to justify their present gathering and republication. The second and third chapters are included for the peculiar reason that their suggestion has been advocated faultily, and without a hint of credit or origin, by some in high authority. I care less for the ignoring than I do for the willingness to ignore, and less for that than I do for the distortion and crippled presentation of a plan which, if carried out in a thoroughgoing manner, would be of incalculable benefit to the world and to science.

The first volume of a similar collection and bearing the same title as this one was issued in 1896. Three of the following papers first appeared in a little volume entitled, "Suggestions to Medical Writers," copies of which are seldom to be obtained in the antiquarian book-stores.

I thank the proprietors and editors of the following medical journals for their kind permission to republish articles first appearing in their columns: The "Inter-State Medical Journal," the "Journal of the American Medical Association," "American Medicine," "The Medical Standard," the "Quarterly Medical Journal," the "Johns Hopkins Hospital Bulletin," the "Montreal Medical Journal," the "Virginia Medical Semi-Monthly," the "Pedagogical Seminary," "The Jeffersonian," "The American Journal of Clinical Medicine."

GEORGE M. GOULD.

Philadelphia, June, 1908.



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BORDERLAND STUDIES.

CHAPTER I.

THE HISTORY OF THE HOUSE; THE STRUGGLE FOR FRESH AIR AND LIGHT.*

Physicians and sanitarians agree that tuberculosis and pneumonia, if not other diseases, are house-diseases. In some way these afflictions depend upon improper living of men and women in badly constructed or ill-managed houses. In fighting the causes of these diseases we are in one way or another brought back to the question of houses, ventilation, etc. But as in all other etiologies and pathologies, we can not deal intelligently with the evil, nor accurately meet the problem in our treatment, unless we know the natural history of the cause, so in this we must know the history of the house in order to understand the finished result. To teach people the use of ventilation, cleanliness, and light, we must understand the reasons why, at present, they really prefer foul air, filth and darkness. For it is true that the vast majority of people of the world do prefer dirt, disease and darkness, and the sources of that preference must be seen in order to combat the evils. Go where one will in all occidental peoples there is either an utter indifference to the need or use of pure air, clean rooms and light, or there is a genuine dislike or fear of these things. Most animals are, in a state of nature, cleanly. The hog and other wallowing animals seem to us to

*Notes, with some of the slides reproduced, of a stereopticon talk delivered before a number of medical, public-health, and other societies.—*The Interstate Medical Journal*, Vol. XV, Nos. 2, 3, 4, 1908.

love filth—which means that by wallowing they avoid the diseases conveyed by flies, mosquitoes, etc. The savage who covers his body with paint, mud, or worse materials, accomplishes the same result in a similar way. If you go into the majority of rooms and houses of the farming, working and poorer classes of our country, you will find the windows closed, the air foul, the food in summer covered with flies, the beds infested,



FIG. 1.—The open central court of the Mediterranean house, with window less outer walls.

etc. Only history can tell us why. Habits are national, racial, even cosmical, and the longer they are in forming and fixing, the harder and more protracted will be their uprooting. The habit of bad houses and of house-diseases is the oldest of human habits.

The Homeric House, like the house of all primitive peoples, was a single room. It was four-cornered, and had openings in

the upper part of the walls to let in light. These, also, of course, let in air, which was not always so undesired as in more northern climes. There is thus a more real and physical reason for the great truth of the proverb, *Ex Oriente Lux*. The Eastern houses had more light in them, because built for human beings, not cattle, and because light could be had without so much cold, as in the north. The house of the chief, lord, or king, was on the top of a hill, partly for protection from enemies, and about it, and stretching away below were the huts of his common people, serfs, servants and soldiers. Thus grew the *πόλις* or

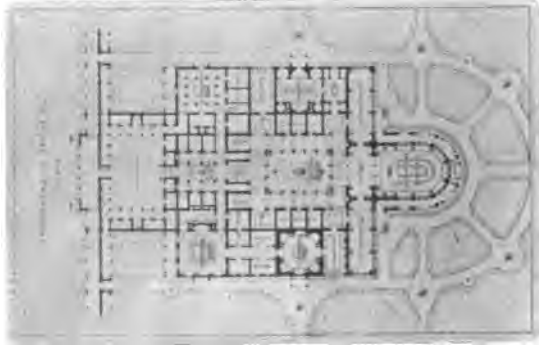


FIG. 2.—Ground-plan of a rich Roman house.

city, whence we get our own words, police, politics, political, etc. The earthly lord, in later times, became, in a way, the heavenly lord, and the hill-top king's houses became temples. But however modified, the original one-roomed windowless house was always to be discerned. The Acropolis at Athens, Rome, on her seven hills, the cities of Hissarlik, Tiryns, Argos, etc., are illustrations of the hill-top origins of the Mediterranean and more Oriental cities. The Roman capital, as seen from Mt. Palatine, and the Acropolis at the time of Hadrian, illustrate the history and early importance of the hill as a settlement place.

Italy was settled by invasion, and this emphasized the need of protection from enemies. The huts of the invaders were round, built close together, and surrounded by wooden palisades. They were usually on piles; they were of bushes or clay, and 10 or 12 feet in diameter. The need of more room was first met by making the round hut into an oval one, or better by bulging out the top. The materials being mostly inflammable, fire was also a great enemy, and the rain made ugly gullies between the huts and undermined them. Increase of wealth helped to change the round or oval hut into a square one, and widened the spaces between them; but, as pressure increased, the two walls of adjoining houses were made into one partition wall, and thus the street, with continuously adjoined houses, came into being.

Especially in Italy there was a medical fact that dictated the location of towns upon hills. The lowlanders were sickly, had ague or as it was called, malaria, while the highlanders were more free from the pest.* It was not a very conscious plan, but the healthy, on Darwinian principles, soon "inherited the earth," or got it somehow.

The better and larger Mediterranean house always preserved certain peculiar characteristics, especially the windowless outer walls, and the open central court. Air and light were obtained from this court. How it worked out in the houses of the wealthy may be seen in the ground-plan of a Roman rich man's house, *e. g.*, that of Petronius (of *Quo Vadis*) and in pictures of similar Grecian interiors. The warm, sunny climate permitted this type of house, and encouraged it.

North of the Alps the climate was cold, cloudy, foggy, etc., and the open court in the center was impossible, and, if lit at all, the northern house had to get its light through the outer walls. In attempting to shut out the cold air, however, as glass had not been invented or come into common use, the air

*A suggestive book has lately been published: "Malaria, a Neglected Factor in the History of Greece and Rome," by Ross, Jones and Ellitt. "The Conqueror of Greece was not so much the Macedonian or the Roman as that great tyrant which now holds half the world—malaria."

itself was shut out, and also the light. And from this comes the tragedy of our civilization. Upon this central fact we must keep our attention fixed if we would understand the history of the house, and one of the chief miseries of our life.

If transplanted north of the Alps, the Mediterranean type of house soon died out, because not adapted to our needs. In fact, we Teutons had to begin all over again, and went about it



FIG. 3.—The most simple and primitive of all houses, the Negrito house of Luzon, Philippines, yet the trees, rafters, etc., are visible.

as did the earliest savages and preclassic hut-builders. How did they go about it?

Ingenuity was wanting in the Cliff-Dwellers of Arizona, and great labor was necessary to replace it. Enemies, here as well as in Greece and Italy, compelled them to seek the hill-tops, or the cliffs, or caves. Also for protection from enemies, the lake-dwellers had to build their huts on piles over the water.

But here should be noted the fact that governs almost all primitive hut-building, and the entire subsequent history of the house: Animals and men are parasites upon the plant world.

The plant can make its tissues out of the sun, air, and inorganic earths in which it is rooted. The animals and man can not do so, but most construct and nourish their organs from the materials wrested from the vegetable world. So in the other great building work of mankind, the house is only to be made by materials furnished by plant-life. Not even the most artificial of civilized houses can altogether forego the sapling and tree; its fashions, at least, are derived thence, and the early huts and



FIG. 4.—Moro house (Philippines) under construction at the St. Louis Exposition. Note the forks and rafters.

the houses generally, of the past and present, are stamped with the seal of the tree. Keeping that in mind, we have an explanation and a revelatory insight into the history of architecture, and of civilization itself, which is a product of architecture. The Negrito houses of Luzon, Philippines, are the simplest in the world, but the trees, rafters, etc., are plainly seen. A Moro house, as illustrated in St. Louis, shows the forks of the rafters, seen also in the Moro tree-house.

The lake-dweller's house was made entirely of pales, saplings, trees, and was covered with brush—thatch, or grain-stalks. In the most rigorous climate of the Esquimaux the always visible poles are as necessary, but the cold compelled them to use the skins of animals to make it warmer. When the climate is very hot, and enemies are not about, the hut may be only a roof, as with the Indian on the Amazon, or among the Queensland



FIG. 5.—The Moro tree-house does not differ from that built upon the ground.

aborigines. When the enemies are avoided by the hill-top protection, and when domestic animals are kept, the Philippine method is excellent. The importance of poles, as well as of thatch, and better constructive skill is shown by the Bakiris of South America. In China today millions of people are living in ingenious houses, but all upon the same plan. Where the summer is hot and the winter cold, as among the Kamchadales,

one family may have one or more houses elevated on piles, and another below to protect from the cold. To keep their grain, etc., the ainhus of northern Japan make elevated store-houses. Protection by palisade walls is shown in this village of the Bechuanas in Africa, and there is the beginning of a street. The beginning of a second-story house, the need of great protection from enemies, and considerable building skill,



FIG. 6.—The lake-dweller's house preserves the common attributes of construction.

are all exhibited by the Arfaks of New Guinea, and all three also among the Tagals of the Philippines. This well-made house of a Hova chief in Malagassy is noteworthy; there are three or four stories, an excellent roof, many rooms, roof and gable windows, etc. But do not fail to notice the V-shaped extensions of the rafters at the extremities of the ridge-pole.

Three occupations have come down to us from the earliest



FIG. 7.—In the rigorous climate of the Esquimaux the poles are covered with the skins of animals.



FIG. 8.—In hot climates the house may become nothing more than the roof.

barbarisms, and are today persisting among us the same as throughout all human history. They are that of the savage, that of the charcoal-burner, and that of the soldier. And their house-building epitomizes and illustrates the history of each. The savage, note well, preserves the most primitive and makeshift style, appositely illustrated by the house of our own North American Indians. Columbus had no kodak, but we know



FIG. 9.—A roof is all the Queensland aborigines require.

the Red Man's tent of that time was a sorry affair. That of a modern chief is much "smarter," as he could get his canvas from civilization's looms. Poles, and always poles, are to be noted! In the progress of time the poles became more scarce, or the charcoal-burner* wanted a better-protecting house; but

*For a more detailed setting forth of the "Evolution of the English House," see the excellent book with this title by Sidney O. Addy, Swan Sonnenschein & Co., Lim., whence I have taken some of the following illustrations.



FIG. 10.—If enemies are avoided by hill-top protection and domestic animals are kept, this (Philippine) method of house-building is adopted.



FIG. 11.—With superior constructive skill the Bakiris of South America make better huts, also out of poles and thatch.

he had no mind to change his architectural style, and he built his cone-like teepee tent of stone. The chimneyless neighbors needed charcoal to burn in their houses, to make horseshoes with, and to make transportation more easy; but they did not change their house-shape for thousands of years. So powerful is tradition and fashion, that there are perpendicularly-walled houses still standing whose doors and window-jambs still lean



FIG. 12.—The ordinary Chinese peasant house is constructed on the same principles with similar materials.

backwards. The house of the soldier illustrates and epitomizes the entire history of the race; at first, as in the invaders of Italy, it was a mere roof, or a round and thatched cone, or poled teepee tent, like that of the Indian, and this has come down to us as the form still existing. But as the round European village houses were perforce compressed into squared ones, so the most modern military tent, which all have seen, has become



FIG. 13.—The Kamchadales have hot summers and cold winters, and build the same kind of a house above ground for summer use, and upon the ground for better protection in the winter.



FIG. 14.—The African Bechuanas protect their similarly constructed houses by palisade walls.

square. But it is single-roomed, of course, and one-storied. Some of the best are beginning to show the beginnings of perpendicular side walls. A photograph of a part of the camp during the recent Manassas maneuvers shows all three styles of house or tent in contiguity. That with rafters alone at the left, that of the round or teepee fashion, and the squared style with upright side walls.



FIG. 15.—The Arfaks of New Guinea make their houses as all others have done, but secure protection from enemies by mounting them on poles high in the air.

The fact of the rafters is the most fundamental in all early house-building. The side walls are late devices. The primitive house was essentially rafters, and these old and ever-new savages, our soldiers, best preserve the tradition of the entire history of the race. The building of a house was the beginning and means of gaining security and power. The man who could say, *This is my house*, was the leader and lord of others. And the best house made its owner the best man. The primitive



FIG. 16.—Note the forks of this well-constructed four-story house of a Hova chief of Malagassy.



FIG. 17.—The Red Man's teepee tent; the canvas is supplied by civilization's looms.

house was made of four poles, leaned, crossed, and bound together, two here and two there, at the top, the points, when crossed, sticking out like the letter V. These two letters, V, on the coat sleeve of a corporal, are called chevrons, and literally and etymologically mean rafters; they show who was first honored with military office. If the primitive householder had such a big and fine house as to have three sets of rafters, he was



FIG. 18.—The oldest house, that of the charcoal-burner (England); it is a teepee tent in stone.

the sergeant. If later he had a gable-window, he was an orderly sergeant. If he had one-story only, the lieutenant had no bars to his shoulder straps; if he had a second-story, he got one bar there, and if a third-story was his boast, he was made a captain, with two bars on his shoulder. Thus little traditional customs like buttons and bands summarize, for the evolutionist, the long-past history of the race. "The ontogeny repeats the phylogeny."

When poles and wood were accidentally not obtainable, and when exigency commanded, the round hut was patterned with great difficulty, in other materials—as, *e. g.*, in the huts on the



FIG. 19.—The modern military tents preserve the traits of all the oldest types of houses.

seashore of the whites' early monastic settlements at Skellig, Michael Kerry, in Ireland.



FIG. 20.—When poles, etc., are not to be found, other materials were used, but the pattern remains the same. Whites' early monastic settlement at Skellig, Michael Kerry, Ireland.

Such remains, and the huts of the charcoal-burners and the teepee-tents of the soldier, are the relics of survivals of the round-hut period of our remote ancestors. It was early replaced by

our Teutonic forebears, by the square style. More room was needed for the cattle, and so the rafter poles were merely widened out laterally and the round room or hall became oblong or square. This fashion was aided by the fact that the sparse population were surrounded by forests. Tacitus found the Germans living their lives, singly, in the woods, or in small communities,* and their descendants have preserved better than other peoples this separatist habit. From this cause flows their prolificity and ascendancy over others. Their seclusions and independence taught them virtue, some cleanliness and freedom from disease, etc., things that crowded folk can never learn or know. This is the genuine reason for Anglo-Saxon supremacy in the world.

A glimpse, startling and essentially true, into the conditions, is given by the historian Michelet:—

In this indiscriminate way of living, woman met with very little care or protection; the place she occupied was an extremely humble one. True, the virgin, the ideal woman, rose higher from century to century, but the woman of real life counted for mighty little in these rustic communities, these massed aggregates of men and cattle. Such was the unhappy but inevitable outcome of a state of things which could only change for the better when the common habitation was subdivided, when at length men plucked up courage to live apart, in separate hamlets, or to settle as isolated cultivators of fertile lands at a distance, and build huts in clearings of the forest. The separate hearth created true family life; the nest made the bird. Henceforth they have ceased to be chat-tels—they are living souls * * * The wife and mother have come into existence.

A touching moment. At length she has a home; she can therefore be pure and holy at last, poor creature. She can brood quietly over a thought, and, undisturbed, as she sits spinning, dream dreams while he is abroad in the forest. The hut is wretched enough, damp and ill-built, and the winter wind whistles through it; but to make up for all defects it is silent. There are dim corners in it where her dreams can find a lodgment.

*“Colunt discreti ac diversi, ut fons ut campus, ut nemus placuit,” he says.

She is an owner now, possesses something of her very own. Distaff, bed, chest is all the household has, as the old song says,* But soon a table will be added, a bench, or a couple of stools * * * A poorly appointed house! but its furniture includes a living soul. The firelight heartens it; the consecrated bush of box guards the bed, to which is often added a pretty bunch of vervain. The lady of this palace sits spinning at her door—when it does not rain, or when warm enough! watching a few sheep the while. They are not rich enough yet to keep a cow; but this will come in time, if God blesses the house. The forest, a bit of pasture land, a hive of bees that feed on the heath are their livelihood. They do not grow much wheat yet, having no certainty of reaping a crop so long in growing. This life, poverty-stricken as it is, is yet less hard upon the wife. She is not broken with fatigue, made old and ugly before her time, as she will be when the time of farming on a large scale has arrived. And she has more leisure too. Beware of judging her in any way by the coarse literature of the Noels and fabliaux, the silly laughter and licence of the broad tales composed at a later date. She is alone, without neighbors. The evil, unhealthy life of dark little shut-in towns, the prying into each other's affairs, the pitiful, perilous scandal-mongering—none of this is begun yet! There is no old harridan yet, coming creeping at dusk down the narrow, gloomy street to tempt the young wife and tell her someone is a-dying of love for her. The serf's wife we are describing now has no friend but her dreams, no one to gossip with her but beasts or the forest trees.

The Greek and Oriental house was, from the first, built for the purpose of housing people, not cattle. In the mild climate the cattle could run loose or be herded. In the north they had to be

*Tros pas du côté du banc,
Et trois pas du côté du lit,
Trois pas du côté du coffre
Et trois pas, revenez ici.

Three steps towards the bench,
Three steps towards the bed,
Three steps towards the chest,
And three steps back again.
(Old French song of The Dancing Master.)

housed; that is the reason for the two types of houses. Today the Japanese house and every room in it is made so that the floor space may be exactly covered with tatami or mats, all of the same size—3x6 feet—the exact size required for a person when sleeping. The Greeks and other Oriental nations had a similar unit of measurement of floor space and house size called a κλινη, about $2 \times 1\frac{1}{4}$ meters. This word κλινη, indeed, later became the word for bed, and is the original of our word clinic, polyclinic, etc. The Teutonic house, on the other hand,



FIG. 21.—The Oratory of Gallerus, still standing in England. The shape of this house, in stone, is the same as that made by bending sapling trunks and tying the tops together.

was built for housing domestic animals, the cows, horses, etc.; and every occidental house bears many signs of its origin, of the forgetfulness of ventilation and light, whence spring our so-called house-diseases.

At first our domiciliary ancestors bent their sapling trunks together, and did not cut them down. Hence the rafters were curved. There is actually standing today at least one type of such a house in Ireland, the so-called Oratory of Gallerus. But it is in stone! How difficult must have been the building! But

tradition and fashion dictated. An interesting illustration of the continuance of this type of house, in its half-way stage, was given in a late issue of the *Popular Science Monthly*. It is the house of the Chuckchees, a tribe inhabiting the extreme north-eastern coast of Siberia. The base walls are stone, with a wooden frame above covered with skins. Note the poles appearing as rafters.

It was early found that saplings of the first houses must be about 16 feet apart, and the two at the other extremity were



FIG. 22.—Siberian Chuckchee house, half stone, with pole rafters covered with skins.

also 16 feet apart. This had been found the necessary width for stabling horses, cows, etc., when facing each other. For thousands of years the problem of the domestication of these animals was the all-controlling one with the Teutonic peoples, and the house was in reality a barn, built not primarily for the man, wife, or children, but to protect and control the cows and horses. Such a 16-foot house was called a bay, and late in the middle ages houses were bought, sold, and deeded by the bay, half-bay (8 feet), quarter-bay, two-bay, three-bay, etc. When

the house was enlarged by a half-bay, it was at first by a makeshift bulging or swelling, illustrated by the picture of a still-existing house at Burscough, England. When, later, your recent ancestors could have a window in it, they, and we, called it a "bay-window." Every kitchen in the land, being an afterthought, is a half-bay addition, and every house shows how bays, across, or at the end, half-bays and quarter-bays, have been added. Every house we see is written all over with its



FIG. 23.—Enlarging the old house by adding part of a "bay," and extending the roof over it. A house at Burscough, England.

own thousand-year history. Our greatest of great grandfathers filled the walls of his "bay" with poles, brush, straw, peat, etc., and later with mud, stone, and finally with brick, etc. Vitruvius says, "First men erected forks, and weaving bushes between them covered the walls with mud."

The entrance door to the ancestral house was necessarily at the end and beneath the gable, facing the east, or the best light,



FIG. 24.—When the sapling-rafters were cut off at the ground, they ran straight to the ridge-pole. "Teapot Hall," Scrivelby, England, still standing.

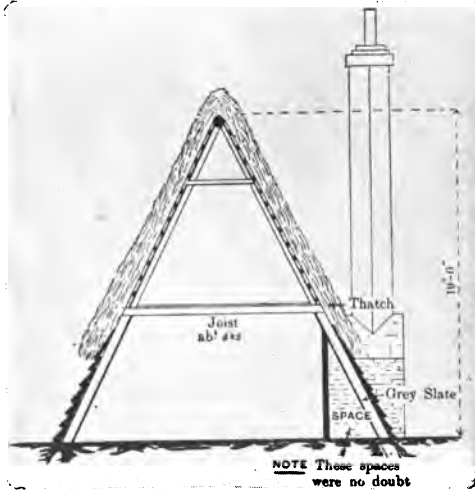


FIG. 25.—Cross-section of Teapot Hall. (The chimney is modern.)

windows being unknown. The ridge pole laid in the forks was the origin of our "16 $\frac{3}{4}$ feet make one rod, perch or pole."

When little trees were not left growing or standing in the ground, but were cut off, the rafters, of course, went straight, not curved, from the ground to the ridge-pole, and the house was shaped in cross-section, like an inverted letter V. An example of such a house is "Teapot Hall," Scrivelby, near Horn-

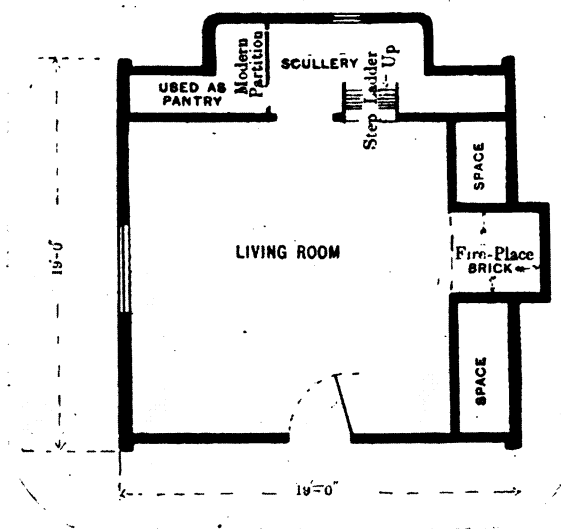


FIG. 26.—By elevating the roof and making perpendicular side walls, the waste spaces, etc., were utilized and more room gained.

castle, England. The chimney is of recent date. The "space" at the angle near the floor was too small except for storing grain, etc., to enlarge which was one incentive for beginning the perpendicular side wall, and also to give better standing room, by elevating the rafters and the roof. These spaces finally grew into little rooms. The addition of rooms was also gained by utilizing the spaces about the old fire-place, or hearth,

and partitioning them off for the pantry, scullery, etc. Finally such a degree of luxury was reached that the richer could have a double house, one end being used for the human beings, and the other for the animals, with some partition between the two.



FIG. 27.—Typical Frisian or Saxon house, primarily an “ox-house.”
(The forks are becoming ornaments.)

The ox-house or barn was thus separated from the fire-house or hall, so-called. The passageway between the two was the threshing floor, or simply “the floor,” or thresh-hold. Hence

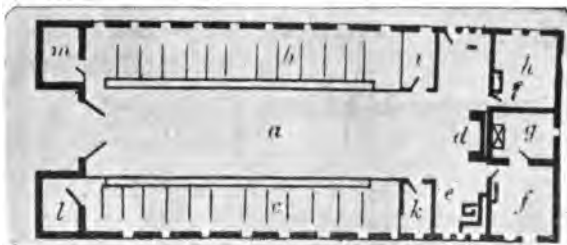


FIG. 28.—Ground-plan of Fig. 27, showing the combination
of ox-house and fire-house or hall.

our modern word “threshold.” It was also called the entry. The typical Frisian or Saxon house, still widely used, is essentially the same as the old English, with slight improvements.

The inside of the original one-roomed house of all early times

is illustrated by a mud-walled house still standing at Great Hatfield, England. The walls are two feet thick. The "speer"

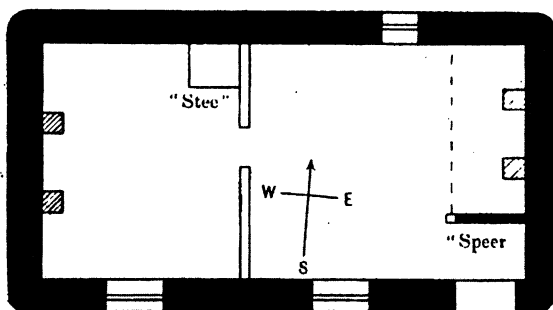


FIG. 29.—Mud-walled house, still standing at Great Hatfield, England. The walls are two feet thick. The "speer" is a screen, protecting from drafts; the "stee" is the ladder to the upper story.

was a screen protecting from the drafts of the door those sitting about the hearth. The "stee" was the ladder going up to the

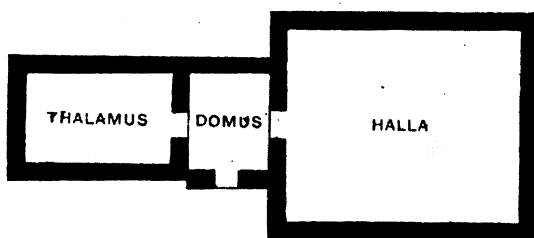


FIG. 30.—Method of adding a living-house to the hall by a half-bay. Kensworth Manor-house.

upper story, which was five feet high. The doorway and lower room of all old-time houses was about six feet, showing that

few men were as tall as that. A living house was added to the ox-house by a sort of half-bay. It is illustrated in the old Kensworth Manor-house. A more common way was that carried out by the owner of a house at Burscough. A half-bay chamber was added behind the hearth-stone, another at the opposite corner, with a buttery, and—a remarkable fact—a “latrina.” The English word *hall* has always denominated the single large original room of the one-roomed house. As, one after another, parts of this space were partitioned off, the women’s “bower” first, and then other rooms, there was finally

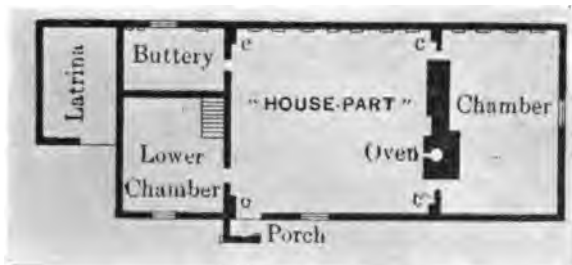


FIG. 31.—A half-bay chamber was added to this house behind the hearth-stone, another at the opposite corner for the buttery and “latrina.”

left only the tiny part of the house we now call “a hall.” It is all that is left of the noble English hall.

The greatest step in advance in the history of architecture was the addition of upright vertical walls, whereby the roof was raised, space inside increased, and the second-story made possible. It was doubtless a slow process, and the manner of effecting it is shown in the section of a barn at Bolsterstone, England. The tie-beams were lengthened outwardly, and long beams, the pons or pans, were laid, the rafters placed between the pans and the ridge-tree. The sides were then built up with stone, mud, brick, etc., shown in a barn at Treeton, England. Often the old wooden structure was entirely covered

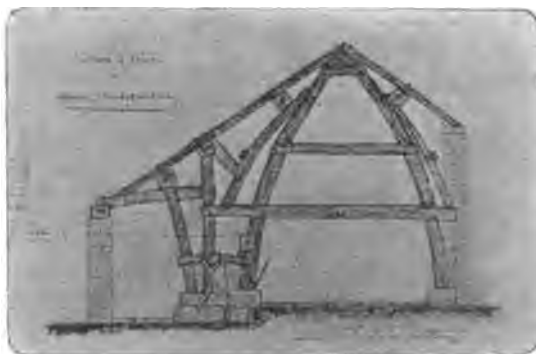


FIG. 32.—Method of making upright sides or lower story walls and increasing the room space. Barn at Bolsterstone, England.

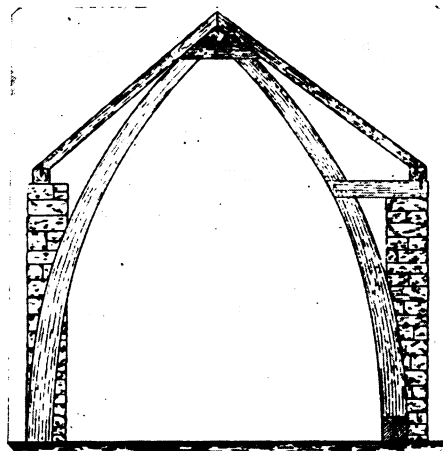


FIG. 33.—Method of transforming the curved wooden rafters into a stone house.

by the new walls, as is shown in the "crucks" of a demolished house.

Until sawed boards came into common use there were no floors, and no second stories. Wood was plenteous in the middle ages, and while it was so, split oak tree trunks were used as posts, tie-beams, etc., and as walls set closely together. When timber became scarce the spaces between the timbers were enlarged and filled with the cheaper materials at hand.



FIG. 34.—Photograph of a demolished house with the old crucks built about with new walls.

The closeness of the timbers is thus a criterion of early date. Finally concrete, stone, brick, etc., became the entire walls. Wooden and stone shingles came into use in the 14th century. The transformation of the "stee" into the stairway, or the perpendicular ladder into the slanting staircase, was slow, and is illustrated by the picture of a stair at Upper Midhope, in which the first five steps are perpendicular, while the upper ones are inclined a little, and supplied with a hand-rail. The stairway was often on the outside. Two-story houses began

to appear in the 12th and 13th centuries. Wainscoting began in the 13th. Tapestry had long been used by the rich as protection for the beds from the drafts and dampness of the thick stone walls, and also, later, as ornaments. These tapestries finally and recently became wallpaper, pasted on the walls, although still advertised as "paper-hangings." As late as the 14th and 15th centuries the hall-floor was not boarded, but was



FIG. 35.—The ladder to the upper story in process of becoming a stairway.

made of packed earth, sometimes with flagstones. Upon this floor straw or other litter for beds was thrown, especially about the sides.

The cheerlessness of these dark halls or homes made men seek a common meeting place at some neighbor's house, who could afford a better fire and seats, and perhaps better wine or beer, and thus gradually grew up the village inn, the beginnings of our

hotels and drinking "saloons." The allurements of these modern places show how history repeats itself.

The struggle for warmth dominated the history and development of northern civilization. In all the previous history of animal life it had also been the controlling necessity, and nature had secured the requisite and uniform 98.6 degree temperature of the human body by a thousand means and devices of which we are ignorant. Man carried on the struggle against cold chiefly by the house. He could not get his body well and properly clothed, and so he and his family and his animals were huddled together in the warm hut, which was made as air-tight as possible. There was but one door, no windows, and few air holes. The heat of his cattle's bodies also helped to lessen the cold. As late as the 16th century the house was called the "fire-house," suggesting the recent introduction of the fire-place, an improvement over the hall without a fire.

The primitive chimney was a hole in the roof for the escape of the smoke of the fire-place or hearth. That the smoke penetrated the whole house is evident from Chaucer's line of the "Nonne Prest:" "Full sooty was hir bour, and eek hir halle." The meats and many kinds of foods were hung over the heads of the people below—the origin of our smoked hams, bacon, dried pumpkins, corn, etc. The custom still exists in many farm houses of our country and time. Turf and charcoal were the more common kinds of fuel, and the dull-red glow gave the only light to the family sitting about it. The poet Spencer, in describing the typical delver of medieval life, says:

"At last he came into a gloomy shade,
Covered with boughs and shrubs from heaven's light,
Where as he sitting found, in secret shade
An uncouth savage, and uncivil wight
Of grisly hue, and foul, ill-favored sight.
His face with smoke was tanned, and eyes were bleared;
His head and beard with soot were ill bedight.
His coal-black hands did seem to have been seared
In smith's fire-spitting forge; and nails, like claws, appeared."

The first improvement in chimneys was a sort of projection or hood over the hearth, with a half-chimney leading, first, towards, and later to, the hole in the roof. Improvements followed until the true chimney was built without or in the house wall, at first only to the roof, with slits for the escape of smoke. Finally it reared its head above the roof. A board or space above the hearth and chimney was used for the hats, and beneath it were the hooks for hanging the mantles to dry, whence our word "mantle-piece." "On the borders of Russia there are still to be found by the chance traveler, or the peddler from Archangel, many Savu-pirrti, or smoke cottages. These have huge open fire-places, a pleasant feature, one would say, in a frigid land, where timber is unlimited.

"But, alas! they are without chimneys, and the smoke which has no escape, save chinks and crannies, settles under the roof to be driven downward by small drafts. From this cause many of the dwellers in these homes become blind. The idea of the 'smoke cottages' was taken centuries ago from the neighboring Letts."

Personal cleanliness of body for one or two thousand years was practically unknown or unthought of in all Europe. Michelet says that for 1,000 years of the middle ages not a man or woman in Europe took a bath, and this is undoubtedly a very conservative statement.* A large portion of Americans do not

*Leprosy was supposed due to the Crusades, to be an importation from Asia; but as a matter of fact, Europe had only herself to thank for the scourge. The war persistently waged by the Middle Ages against the flesh and against cleanliness was bound to bear fruit. More than one female saint is commended for having never washed even the hands;—how much less the rest of the body! An instant's nakedness would have been a mortal sin. The worldling faithfully follows these precepts of the cloister. The society of those days, so subtle and refined, which makes sacrifice of marriage and appears animated only by the poetry of adultery, retains singular scruples on this simple point of personal ablutions, dreading every form of purification as a defilement. Never a bath known for a thousand years! We may be quite certain not one of those knights, those fair and ethereal ladies, the Percivals, Tristrams, Iseults, ever washed. Hence a cruel accident, highly unpoetical in such romantic surroundings—the furious itches that tortured our thirteenth-century ancestors. (*Michelet.*)

bathe more than once or twice a year. There was probably very little of clothes-washing in the early times among the better classes, and none among the lower. Doubtless two if not all three of the kinds of lice that are parasitic upon the human body were borne about by almost all men and women. Flies were everywhere. Latrines were at first unknown and even in comparatively modern times the few best of them were as bad as our worst today. Bedbugs were in every bed so-called, or miscalled, even in the best and most costly.

Physicians well understood how such conditions made it inevitable that contagious diseases were everywhere prevalent, and prevented the increase of population which came at once in the last one hundred or two hundred years when a little personal and household cleanliness, and freedom from lice, checked the multiplication and dissemination of the germs which caused the scourging infections which cursed the long dark history of 1500 years.

The water supply in olden times was always difficult and usually impure. The "pits" for latrines were dug near the walls, and oblivious of the conditions of drainage. The existence of a spring or well doubtless caused the location of house or castle near by, as a primary need was always water.

The history of domestic architecture and sanitation in England makes it plain that progress in these things was almost exclusively due to the initiative of the king, and then spread to his nearest underlings, thence to the richer of the private citizens. One must not err, however, in thinking that the example thus set had many imitations until the last century or two. In the reign of Henry the Third, the first attempt at underground drainage was made. The kitchen refuse, dirty water, etc., had been carried through the great hall at Westminster, until, in the language of the King's Writ, "the foul odors arising from them seriously affected the health of the persons congregated at court," and an underground drain was devised to carry them into the Thames.

The first conduit of water was established in London in the 13th century, but long after this the water-carriers hawked water about the streets.

In old manuscripts and chroniclers of the Arthurian stories, water for washing the hands and face was brought to the guests after the removal of the armor, and before the feast. In the later middle ages there were a few houses which had, *in the screens*, as it was called, a lavatory or washing place, with a cistern of water and a sideboard or recess. Edward the First introduced the luxury of baths, and in some houses of the next century there were *camerae privatae* of a very crude kind. These "Garde-robcs" or "privy chambers" were usually in the best houses of the 14th century, but of course without drainage, sometimes with pits, sometimes without.

"Eating off the same board," or platter, was the rule, *i. e.*, one plate served for all. Our modern custom of taking wine with one another, or from the same glass, is a survival of the old custom. The English said grace before and after meals.

The custom of bringing basins, ewers and napkins to the guests before the dinner, prevailed up to the last few centuries. After the meal the hands were washed again; the food was handled with the fingers, and the second washing of the hands was thus made necessary. The dining table was made of board laid upon trestles. The meal over, the boards and trestles were taken away. The seats were wooden benches. Two meals a day was the rule; dinner at about ten or eleven, and supper at five. Knives and spoons came into use about the 14th century and forks much later. In the time of Richard III, the noblemen pulled their knives from their wallets when they began to eat.

The table was set near the wall, the diners usually next to the wall, the front of the table open without seats, for the approach of servants. At great feasts, jesters, mimics, musicians, etc., amused the company. The chief ornament of the dining table was the huge salt-cellar, set in the center of the boards. Next to it in importance was the "ship," or "nef," a dish in the

shape of a ship for holding spices and sweetmeats. The "castor" of our childhood days is probably its modern representative. The mazer bowl completed the "china" outfit—a large vessel from which all drank in common. The meats and other foods were placed either on the table or on wooden plates. The bones and refuse food were thrown by the diners to the dogs hungrily awaiting their share of the feast. Wooden trenchers, the first form of plates, are preserved as relics in England today, hollowed on both sides, in order to be turned over for the pudding. They show, of course, no signs of the use of knives and forks. The fingers made no marks!



FIG. 36.—From a piece of Bayeux tapestry, showing Harold's Manor House with outside stairway, etc.

The modernness of the kitchen is shown in the fact that in old pictures the cooking is represented as carried on in the open air outside the hall, and even now the baking, even in the United States, is sometimes done in ovens outside the house. In common life the hearth or fire-place had been and long remained the sole cooking and warming place. An old picture of Rosham Church and Harold's Manor House, at Bosham, in Sussex, from a piece of Bayeux tapestry, is particularly illuminating. The outside stairway, the dogs waiting for bones, the drinking horns, impossible to be cleaned, all speak of the manner of dining of our ancestors for many centuries.

Henry VIII issued an ordinance against his scullions lying about naked and filthy. The Courtiers and Commoners stank so that Wolsey kept an orange filled with salts against the pestilent air. Erasmus ascribes the plague and the sweating sickness to filth, especially to clay floors covered with rushes under which were buried beer, grease, bones, excrement, etc. Thomas à Becket was blamed with luxury because the company room had fresh straw every day. Queen Elizabeth's room had straw. In 1680 the courtiers went to Potsdam on stilts because of the mire and filth.

The development of the church building is not a part of our subject, but may be glanced at. The word church itself shows the history; it meant simply the lord's house, or the ruler's house, and it was naturally the town hall, public hall, or basilica of the district or community. It was at once a temple and court of justice, the place where the local council met. The forms of these buildings are the same as those of the pagan basilica. The old English word *castel*, or *castle*, meant *village*. The watch-tower, for keeping watch or guard over the country about, was on the highest point, whence the signals of danger were given and received. The church tower was also used as a watch-tower, raised on high above the lord's hall for the same purposes as the watch-tower. The original use of the bell or bells in the belfry was to guide travelers home in dark nights, a light also aiding. The bell was also used to summon the burgesses together, and for sundry other purposes. The churches were thus the only public or municipal buildings in English towns during the whole period of the middle ages. They were at first, and for a long time, used not only as courts of justice, but as places of resort for the transaction of any kind of business. The markets in Europe are often still about or in front of them. Jesus drove the money-changers out of the temple. The history of the church has been in one respect a decline of secular power, until now the church building is used solely for religious purposes. The royal arms have at last been

removed from all English churches, but the origin even of the most ornate is clearly the hut of boughs or poles. Take the belfry or watch-tower away from many a dear little English church, and the added "half-bays" from the hall, and the original bay or hall is the beginning form. Do you think those crosses on the steeple and at the ends of the ridge-poles are Christian in origin? They are thousands of years older, and are the Vs or forks of the rafters made into ornaments and transformed symbols. The old Swede's church at Wilmington, Delaware, shows a quaint transition form, with its living room in the belfry, its watch-tower, its quarter-bays, etc. The most ornate cathedral, if it could be traced back, would show, in its evolution, the tree, the rafters, and the core of the single hall. It is plain that the church tower or belfry is the old round pole tent set before and fused into the later "hall," become church.

Our American domestic architecture is derived from English models. At the first there was extreme simplicity as in the little house of Myles Standish, with its double-pitched roof—a still common proof of the difficulty of raising the roof and getting a second-story. The later open-air verandahed southern style of the summer and warmer climate, as illustrated in Washington's Mt. Vernon house, shows how the fresh air and shade was sought, without adopting the aula of the Mediterranean house. Because we are English and Northern, the hall could not be forgotten, and the central pillared court was, as it were, put on the outside. In Mexico the house returns frankly to the Mediterranean model. The climate invites the patio or open central court. In New England the rigor of climate forced the addition of numerous bays, and half-bays, and brought the kitchen, woodshed, barn, etc., into unity and under one roof. All are frequently connected so that the farmer or house-wife does not really go out of doors in the severest weather to attend to the cattle, horses, hens, etc. It has taken us a thousand years to get the barn separated, and at a distance from the house, to which it was long united; and at first house

and barn were all one, as we have seen. In the South, even now, the kitchen often remains a separate building.

So long as the family living room and the ox-house remained one hall, the men slept sometimes over the cattle; if there were two rows the men slept on one side, and the women on the other. When there was no hayloft, men and women slept on the floor of the hall, and, of course, immorality was encouraged.



FIG. 37.—Washington's Mt. Vernon house, the open central court of the Mediterranean house, is, as it were, put on the outside of the house.

We spend one-third of our lives abed, and yet few take sufficient thought of the history of the provision of wise bedding. What we call a bed was unknown to our ancestors. By our term bed we mean a bedstead. We still admit the power of history in the term "feather-bed," but the feather-bed introduced into England from France in the 14th century is today almost obsolete. What we call a mattress, our forefathers called a bed.

The frame work, raised from the floor, upon which we now place the mattress and bedding, was unknown to the common people of the time of Shakespere and Chaucer. The bedstead is not used by the refined and cleanly Japanese people. The English mattresses or beds were often expensive and elaborate, with the richer classes, covered with rich stuffs and quilted. Pillows and bolsters were also of the same materials. This is shown in their careful mention in the wills of Shakespere, and even in those of nobles and kings. In all primitive times, even with the rich, and down to later centuries with the poor, the bedding was made of dried rushes, ferns, heath, hay, straw, leaves, boughs, etc., laid upon the floor next the walls of the hall. Writing in 1678, Aubrey says that in English houses, "when night came, straw, dried rushes, heath, or dried ferns, were spread upon the floor; and those unprovided with beds or couches laid themselves down each under the bench or table upon or at which he or she sat." The more comfortable (but always removable) mattress, or feather-bed, etc., was a step in advance. The development of the bedstead is a long story and a most interesting one. I regret that I can only epitomize it here. Cleopatra had an ornate bed and bedstead. The richer Greeks and Romans had narrow or single couches, their *triclinium*, or dining-bed, used about the dining table in the day, and as sleeping couches at night. As civilization crept northward and riches began to produce comforts and prides, people grew tired of sleeping upon the floor, upon straw, or even upon mattresses. In the 16th century ox-houses there were beds, blankets, sheets, mattresses, pillows, etc., but no bedsteads. The big family chests for linens and more precious holdings were used as a sort of bed at night, and possibly this gradually developed into a sort of bedstead or raised basis for the bedstead. The "bedstock," a movable structure, followed; a later stage was what we now call a "bunk," the bedstead built into the room like a steamship berth. Then followed the enlargement of a part of the room as a bedstead, a sort of room

within a room. The size of the bedstead was increased to a "double bed," and soon the exigencies of cold and space, and the natural desire to raise the bed above the dirty floor, brought about the bedstead as we know it, for the whole family. And not only for the family, but for the guests and strangers. As riches grew there were three bedsteads, the so-called "Trinity," that for the lord and his immediate family; that for the closer attendants, and lastly that for the lower servants. The great bed of Ware, now at Rye House, Broxbourne, Herts, was a monster, and monstrous. For a time the cult of the bedstead was fashionable, and great sums were spent upon its construction, furnishings, and ornamentations. Two causes operated to form the custom of having curtains about the bed, the protection from cold drafts, and the desire for privacy. The state bed of George IV, designed by Heppelwaite, shows the extreme and our American colonial four-poster was a better bed. It is remarkable that the growth in manners and morals so long permitted the use of one bed by several persons. We have today reduced the number to two, and our "double bed" still lingers as a barbaric relic of our barbaric origin. The history of the bed is a sad one. The Orientals, and especially the Japanese, solve the problem much better than our occidental civilization. Until metal might replace all wood in the bedstead, our ancestors, had they kept their floors clean, should have slept on mattresses, rugs, etc., placed on the floor. In China millions of people today walk about their huts on little islands of dry ground between which flow the canals of slops and waste water. Our Teutonic and English ancestors were almost as dirty as regards the disposal of waste and the filthiness of their floors. Only the Japanese learned to keep their floors and beds clean. One may suspect that the nomadism and tent-dwelling of the Orientals, with their constant moving about, was largely due to the necessity of escaping from bedbugs and the accumulation of filth. The curse of all Anglo-Saxon bedsteads for at least the last 500 or 1000 years has been the bedbug.

That little animal has played a role in history that few can understand or estimate, greater, I suspect, than any king or war. Poor Mrs. Carlyle was unable to have much peace of mind or body when she was traveling in the best way in England only fifty years ago, because of this monster of Anglo-saxon filthiness. So long as wooden bedsteads were in use it was next to impossible to do away with the bedbug, even if there was much wish to



FIG. 38.—We spend one-third of our lives abed. The result of much study in constructing the simplest and most hygienic bedstead.

extinguish him. The English matron had too little wish of the kind. The result was a gradual weeding out of sensitive persons, because of sleeplessness, and the encouragement on Darwinian principles of the existence of the stolid, thick-skinned, snoring, full-blooded sleepers, who had no nerves and plenty of blood for the parasites. The bedbug has had more to do with the formation of English character than climate and food, or any other several causes combined. The extensive draperies

and curtains of the bedstead gave further nesting places, if they were needed for the parasites. The large beds also encouraged immorality, as all readers of medieval literature know. Only in the latter part of the last century has there been some progress in the war upon the bedbug by the plastered and separate rooms, and the single and metal bedstead. The metal single bedstead which can easily be kept clean and free from bedbugs is an important means to a better civilization. Wire spring mattresses are now made that will not "sag" under any load. They may be unhooked, rolled into a bundle, and stuck in a

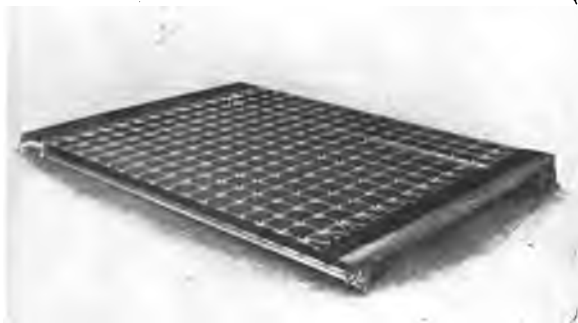


FIG. 39.—A wire mattress that may be unhooked, rolled in a small bundle, and put in boiling water.

kettle of boiling water. How advisable such a device and such cleanliness! At the recent Sanitary Congress in Glasgow, Dr. Fyfe exposed the horrors of wool-flock, the material used by the poor for mattresses or beds. The rags and old clothes of tramps, the refuse of households and fifth holes is dumped into a machine, without any cleaning or disinfection, and cut and torn to a confused mass of fibers and ordure called flock. The water in which a sample was washed was worse than Glasgow sewage—and 78 percent, said Dr. Buchanan, of their poor people sleep on beds filled with this dried sewage.

For a thousand or two thousand years the house of our forefathers had been, in colder weather, a dark hole illuminated only by the faint gleams of the hearth-fire of charcoal or twigs, or of the rush-lights and dip-lights which could serve only to make the darkness a little less obscure. It seems strange that life could have attained the poor dignity it had under such conditions. Cataract and blindness, "blear-eyedness" (conjunctivitis, etc.), came on early, under such circumstances. Note especially that no civilization, as we understand it, was generally possible. Reading and writing could not have developed into learning, psychical light was impossible without the physical light; it could not have come to fruition without glass windows.

No discovery of the ages was of more value than cheap glass. The very word *window*, is a pathetic proof that it was the need of ventilation and not of light that begot the device. It means *wind eye*, or wind hole, its main purpose being to admit air instead of light. The loop-holes, or lowp-holes of old English barns, being narrow vertical slits, or little holes, show the same explanation. Among the Norsemen there were no such lowp-holes in the walls, but there were *louvres* or holes in the roof covered with the caul of a new-born calf. This showed the need of light rather than of ventilation. In England in the late middle ages the wall holes became "fenestralls," and were a kind of framed blinds of cloth or canvas. In the time of Henry VIII linen was used which had been dipped in oil. Some glass had been a little used in the great houses from the time of the Romans, but it was so dear that even two or three hundred years ago the panes in smaller houses were very small and some of them were made of wood, cloth, etc., others in the same sash being of glass. In the 16th century the rich vied with each other in having large and numerous windows. But even then glass windows did not pass to the heir as part of the house but only to the personal representatives. They were movable casements easily taken out. The smaller

the window the older the house, is still a rule of judgment in English architecture. The window tax in Continental Europe, levied down to our own times, is an evidence of the sad stress of life, and the brutal necessities of government. The window tax was repealed in England in 1851. All early windows were hinged; sliding window panes are modern.

The history of civilization as related to the house may thus be summed up as consisting of four epochs: 1. That of securing protection and warmth by means of the single-roomed, windowless hall. 2. That of the creation of the chimney. 3. That of the making of glass windows. 4. That of securing ventilation; and this is the stage in which we are now living and shall live for centuries to come.

From the beginning of history the greatest obstacles to the opening up of new nations, especially in tropical and semi-tropical countries, and the spread of civilization, have been malaria and yellow fever. Malaria chiefly dictated the location upon hills of the Italian settlers, with a multitude of subsequent social customs and laws. Among savage peoples it has been a no less dominant factor, and in new countries it has crippled the energies of the people and sent millions to death, each century. Malaria has been the great ally of barbarism, the chief enemy of social progress, the unconquerable foe of medicine. With its quinin the profession had long waged a losing battle, but now the victory is possible to science, for it was a battle, if we had but known it, against—the mosquito!

The malarial parasite is conveyed from man to man through the agency of the mosquito, of the genus *anopheles*. The mosquito receives into its stomach from man some blood containing the parasite which forthwith goes through certain developmental changes, and in the end the germs make their way to the salivary gland of the mosquito, and thence get transferred to a new victim. The mosquito is not only the carrier, but also the intermediary host of the malarial parasite during an important part of its life-history. These facts have been

ascertained by immensely patient work on the part of Laveran, Grassi, Celli, Ross, Manson, etc.; the steps gained by reasoning and by microscopic investigation have been confirmed by two carefully planned experiments. Five people spent the worst months of the year in a highly malarial district in Italy, taking no quinin and living out of doors except when the mosquitoes feed; *i. e.*, just before sunset and in the night. At these times they were carefully protected by wire blinds to their windows and doors, and mosquito curtains around their beds. They had no malaria. The second experiment consisted in feeding mosquitoes of the anopheles group on patients suffering from malaria in Italy, sending the infected mosquitoes home, and letting them feed on two of the heroic investigators, who forthwith had well-marked attacks of malarial fever.

In league with malaria has been its powerful and faithful neighbor, cholera, or yellow fever, more daring, dashing, and suddenly killing. Since 1793 the disease has been the cause, in our country alone, of no less than 100,000 deaths, 41,348 of which occurred in New Orleans, 10,038 in Philadelphia, and 7,759 in Memphis. Between 1853 and 1900 it caused 35,952 deaths at Havana. Since the practical application of the knowledge gained by the work of Reed and his associates the disease has been practically eradicated. And yellow fever is also due to a mosquito. To the everlasting honor of the United States, and of American medicine, the role of *stegomyia fasciata* in the transmission of yellow fever was established by American physicians, and thus the certain way made clear of ridding the world of the horrible disease. There is no hero in the world's work more deserving of honor and monuments than the noble martyr, Lazear, who allowed himself to be bitten by the infected mosquito, well knowing that his probable death would substantiate the truth upon which so many lives depended. He died of the disease twelve days after his sublime test had been made. Dr. Walter Reed, the American of whom we are all proud, planned and carried out the investigation which estab-

lished the great truth. The profession and the nation owes him honor and the splendid monument now planned.

The relation of yellow fever and malaria to the house is evident. In most new tropical and semitropical countries the entire question of ill-ventilation, upon which ill-health depends, has been dictated, unconsciously of course, but not the less absolutely, by the mosquito. The aim has been to exclude the malaria, or bad air, and especially at night. About one-half of the lives of the inhabitants was spent in doors. But with the



FIG. 40.—Lazear, the American who gave his life to abolish yellow fever.

air came the deadly mosquito. Now night air is purer than day air if the mosquito is excluded, and so the poor blunderers excluded both the good air and the bad air, and lived in an air made foul by themselves. The last Baedeker ordered travelers in Italy to shut the windows at night. What all should have done, and Baedeker should have known for the last several years, was that a mosquito netting should have been used, the good air freely admitted, and the bad air blown out of the sleeping rooms. How slow we are to recognize the problem

and face the truth is illustrated by our recent experience in Panama. After a ludicrously false and expensive start there, our government has at last recognized that housing and sanitation are the primal necessities. We can not dig the canal with dead men.

Perhaps the work of the common housefly has been as death-dealing in propagating disease, and *musca domestica* is everywhere, North and South. In January and February of 1905 there were a quarter of a million deaths in India from plague, and it is possible that the flea is the carrier of the germs of this disease just as the mosquito is of malaria and yellow fever. All Oriental nations are tormented by the flea. Even the Japanese mats are filled with them. A commission of eminent scientific men is investigating this problem.

In all northern nations the struggle for warmth, and the expense of heating houses, brought about the same ill-ventilation as did the mosquito in the more southern climes. The vast majority of houses in Europe and America are stench-holes and breeding places of disease because of the foul air of badly ventilated rooms.

The two causes combined have thus brought about the century-long habit of badly ventilated houses in the entire civilized world. The better class of householders, by means of attention and wealth, have been able to secure good ventilation and cleanliness through a hundred devices and by the waste of much heat. With all the devices that architects and engineers have made, the heating and ventilation of our homes is too expensive, too wasteful and too blundering. One of the greatest benefactors of mankind will be he who will enable a poor family to heat its house and at the same time supply it with pure air at one-tenth of the expense now demanded. It can be done, and must be done.

For what does ill-ventilation mean? It means a hundred minor diseases and types of ill-health encouraged, and the consequent preparation of the soil for the terminal diseases

which invite Death himself. But more than all else it means the direct production of those diseases of the lungs which cause almost one-third of all deaths. Bad ventilation means pneumonia and consumption. As to pneumonia it has in late years been increasing so fast and becoming so deadly that in many cities the death-rate is greater from it than from consumption. But what is the ultimate cause of pneumonia? The late Com-



FIG. 41.—The "Home" of a million children.

missioner of Health of Chicago truly says that it is "a disease of modern architecture," *i. e.*, of ill-ventilation and filth. One million people die in the world every year from tuberculosis, or about 3000 every day. Ten million people in the United States, now living, will die of the disease. Every third or fourth adult now dies of consumption, and as a whole about every seventh death is caused by it. In coughing the consumptive emits several

hundred million bacilli every 24 hours. It has been said that 98 percent of people have some tuberculosis. And all these deaths are due to the house, its bad ventilation, and the overcrowding, etc., which goes with it.

Cold, darkness, and filth—these are therefore ancient enemies of our life and happiness. The struggle of ages has been against cold, and to secure an air-tight house. By means of plastering and glass windows it was at last secured; and also the light necessary to banish the more evident kinds of filth. But tragedy ran through it all because it was not seen that air may be really the filthiest and the most dangerous of all filthy things. In that blunder is our civilization now caught, and the great duty of physicians and philanthropists generally is to undo the terrible mistake. In the entire history of the past the greatest and best educational influence in the lives of the young was the home. But in the great city there are no homes. The tenement and the apartment houses can not be called homes in any true sense of the word. Next to the home in molding the child's mind were the playgrounds, the garden, orchard, fields and woods, to which the boys and girls could fly. All this for the child living in great cities is also gone. The new education, to some extent and in some poor ways, is seeking to bring back to the child these lost most valuable things. The city kills the home.

In New York City there are about 350,000 people living in 40,000 tenements without windows opening to the outer air. The results are shown in the statistics of death and in the wretched people. In Philadelphia, the city of homes, there is scarcely a windowless room, and there are about 300,000 separate dwellings. But we dare not forget that however far away we allow indecent living, our filthy sin will be punished by disease. Any one of us may be, and all of us together, will be punished for the acts of a diseased sinner in Butler, Pa., or in Ithaca, N. Y. Preventive work is a State affair and can be undertaken on a large scale only by municipal and state authori-

ties. Scattered families may know enough to sleep with windows open, but a window opening on a foul air-shaft, or into another close and dark room, is still a thousand miles from the ideal. The "spit-cup," the disinfectants, the paper napkins and bags, which are burned up, are within reach of the thousands; but they will avail little when the whole building is rotten and reeking with infection. For wide streets, sanitary houses, and systematic disinfection, we must look to boards of health, tenement commissions, city councils and legislatures. Each

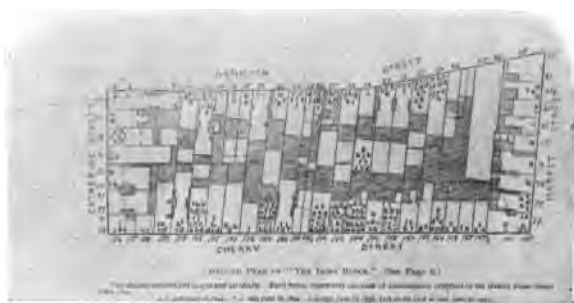


FIG. 42.—The famous "Lung Block," housing 4000; in nine years 265 cases of tuberculosis were reported from it.

of us, therefore, is responsible for the sorry but bettering condition of things in New York City.

In the famous "lung-block," the uncleared walls and floors were the best places for holding the germs of tuberculosis bred by the millions by the former dying occupants. It housed nearly 4,000 human beings, and in nine years 265 cases of tuberculosis have been reported from it. In Chicago they have a rival of the "lung-block," called "Consumption Row." One hundred and thirty-eight cases of consumption received at the Cook County Hospital in the last four years, came from this block. And yet the deaths from tuberculosis are in some small cities twice as great as in New York City. The City of Philadelphia

has much to be proud of, and much to be ashamed of, but if it is in politics "corrupt and contented," its people, of all in the world, are the best housed and in this way contented. It is proverbially the City of Homes. It has solved the house-problem the best of all. A typical Philadelphia, or model house, for workmen's families, rents for from \$10 to \$16 a month. That is what is wanted in every city and village of the land.

Among the most far-seeing attempts to deal with the tenement house problem is that of the establishment of tenements



FIG. 43.—"Consumption Row," from it 138 cases of consumption were sent to Cook County Hospital in four years.

on a plan uniting sound business principles and charity, instituted in Washington, and especially that of Mr. Henry Phipps in New York, who has given a million dollars, the rents to go to extension of the system. The negro population, foolishly and suicidally excluded from many districts and otherwise unjustly treated, is included in Mr. Phipps' noble scheme. In this, said to be the most perfect tenement in the world, light, air and sunshine is in every one of these two, three and four-room suites.

But, of all the peoples of the world, the Japanese have solved

the problem best. And that is the cause of their success, and of their coming success in all the world's work. All success, national or personal, rests upon health; and health depends upon the house, the purity of its air, its cleanliness, physical, personal and social. A typical Japanese house has plenty of air and light; it is far cheaper even than the Philadelphia model; it is what no cheap house in civilization is—beautiful! Three pairs of sapling tops were crossed in its original construction! The Japanese have learned how to clothe the body and keep it



FIG. 44.—Tenement house built by Henry Phipps, combining
“business,” charity and hygiene.

warm while keeping the air of their houses cool and pure. The air of all our houses and cars is too warm, and is impure. The poorest Japanese has plenty of light in his house; our poor have none. There is no filth on their floors, in their yards, or closets, while our people, even the well-to-do, are usually filthy. The Japanese have no “beds” and so they have no bedbugs and other bugs. In every farmhouse of our land the air is dead, the windows closed, the rooms dark and stuffy. And so our death-rate is far higher than that of the Japanese. They also have compulsory vaccination, while we allow the wild fools of anti-vaccination to kill thousands every year and maim thou-

sands more. The Japanese and the Finns bathe the body daily. How is it with the rest of the world? And with all our money and "public works," we can not put pure water into our houses. At least 50,000 of our people are killed each year by unnecessary typhoid fever, and the unnecessary disease costs us about \$100,000,000 a year! Before we leave the Japanese house we should note that this first of all warlike peoples exhibits the first systematic and successful attempt, as Major Seamon has shown, to save its soldiers' lives and health and to win battles by so doing.



FIG. 45.—Kitchen of a three-room suite in Phipps' Tenement; rent, \$3.50 a week.

The housing of its citizens, especially of the more impoverished, should be the vital concern of every municipality, and of every good citizen. No house should be built except upon the advice of an expert in sanitation. Every architect should be held by law to have made a thorough study of the methods of modern preventive medicine. Health boards should be strengthened, paid, and well paid, then held accountable for the diseases that should have been prevented. If one could speak to the lay world he should say: "Take the medical profession into your confidence and your service. Abolish your selfish

quacks. They build no hospitals, except to cheat you and your sick. They do not care for or believe in preventive medicine, the less of it the better for them. That is the distinction between a good physician and a quack. The first labors without pay to extinguish his own calling, to commit professional suicide, by preventing the diseases which kill you. The quack knows nothing and cares less for that; and yet you allow Eddyism, osteopathy, patent-medicine drug stores, vibralogy and infinite tommyrot to crowd your physician friends out of practice, and you pay your quacks a hundred times what you pay your medical friends. What a shame! And your death-rate could easily be reduced 50 percent, and your morbidity rate 75 percent."

As to tuberculosis, it is a curable disease, and the establishment of special sanitariums is to be encouraged. Even the roof of ordinary hospitals in the city may be used, and if that is not obtainable, life out-of-doors at home is curative. Consumption hospitals, like that at Denver, should be built where it is high and dry and sunny. Cold is no disadvantage, and even snow, as at Muskoka, makes no difference in the cure. Expensive buildings are not at all necessary, as a tent may serve the same purpose.

As an institution, placed over against the community, the house-struggle of the profession of medicine is largely epitomized and illustrated by the present day city hospital. The profession has given great thought and study to the subject of the housing of its sick. Without much danger of exaggeration it may be said that it has made a mess of it! The big modern city hospital is too expensive, and it by no means runs abreast of nonprofessional institutions in meeting the demand of civilization for the doing of its work in a businesslike, thoroughgoing, and unselfish way. The hospital breeds hospitalism—one of the worst of seemingly incurable diseases. The institution has become cursed with institutionalism—one of the worst evils of incorporated function. It does not need more than average acumen and intellect to see that the huge hospitals and dispensaries

are usually carried on not primarily for the patients' good, but for that of the physicians in charge. Some have become downright abominations, and their destruction, if something better could take their place, would be fortunate both for the community and the profession. I cannot adequately set forth the often expressed reasons for this sad condition of affairs. Nor



FIG. 46.—A typical Japanese house, cheap, clean, airy, well lit, beautiful.

can I, of course, show the better hospital that should supplant the old-new heathenish and soulless institution. In offering his plan for an improved hospital, Dr. Bayard Holmes, of Chicago, says:—

An ideal hospital should be constructed for the patient. Only so far as the patient's need coincides should the convenience of the nurses, physicians and administration be allowed to dictate. The traditional architecture of the hospital is either monastic or lodging-house-like. It

is an assemblage of cells or a collection of dormitories with kitchens attached. In modern times ventilating holes and operating rooms have modified only slightly the problem of construction.

The first modification of the hospital which has been brought about lies in the isolation of contagious diseases in separate hospitals, and the construction of shacks, tent colonies, or permanent cottages for the tuberculous. The great success of the daring innovations of Trudeau, in the Adirondacks, has made the treatment of tuberculosis in hotel-like hospitals criminal and has compelled many institutions to place the tuberculous medical and surgical cases in temporary tents or wooden huts. Even the managers of the institutions for the insane have removed those unfortunates who were lucky enough to have tuberculosis to isolated, hygienic, temporary structures, greatly to their advantage and also to the safety of the dormitories from which they came.

Modern aggressive surgery has made the hospital into a hotel for the temporary care of the vivisected. All that the surgeon cares for is a room for his patient to occupy during the three or four weeks she is recovering from his incisions. She may then go home and get well or lead a life of invalidism, as it happens. To cure his patient and restore her to a life of usefulness and happiness is not the modern surgeon's conception of duty. He looks on the invalid as an incumbrance to his hospital, and all the essentials of recovery as unnecessary expense and space-consuming impedimenta. Even the public authorities, as represented by the building laws for hospitals, put the care of the sick, those suffering from contagious diseases, entirely out of the possibility of metropolitan hospital treatment.

In order to be most useful the surroundings of home life should be preserved. The present hotel-like or monumental hospital is alarming to the patient and quickly becomes institutional in its rules, regulations and atmosphere. The methods of treatment in these institutions are not easily carried over to the surroundings of the home. The ventilation or lack of ventilation is depressing and mysterious. The windows can not be opened and the doors are caisson-like in structure. The barren severity of the walls and floors, dictated by antiseptic precautions, are unrelieved by color, fresh air, or sunshine. The remoteness of the service rooms and the complicated conditions of bathing are impediments to the patient's recognition of the efficiency of similar treatment which might be carried out at home.

Fresh air and sunlight are therapeutic measures which can not be neglected in tuberculosis and all diseases of the respiratory tract, and which should not be neglected in nutritive diseases and all conditions of repair, whether from traumatic injuries, surgical operations, or errors of metabolism. The only way to secure absolutely fresh cold air is to have the patient's room wholly separate from all other occupied space. In other words, the patient should be in a structure by himself, in a tent, a shack, a hut, or a little house. He should be surrounded on all sides by fresh, unpolluted, cold air. His room should have windows in all directions, it should be capable of being warmed for his comfort during dressing, and it should have the conveniences of his existence, a toilet and basin and buffet. Such a structure, so far as I know, has been provided for tuberculous patients only. In a little more extended plan it was the basis of the cottage hospital of the 60's.

But hospitals, sanitariums, and even home treatments, are not the chief needs of the hour. Climate, we are learning, is not the sole or chief requisite in the treatment of tuberculosis. The segregating or traveling treatment of disease is only a makeshift. But if hospitals and sanitariums tend to become permanent ends in themselves, they can grow into evils. Sunshine and pure air are needed, but abolish smoke and dust, and sunshine and pure air may be had even in New York City. Social conditions, extreme poverty, uncleanness, bad ventilation, etc., in the home, create disease. The cure is not to take the patient away and leave the bad house to reproduce new patients who are again to be taken away, and so on forever. The cure is to make every house a sanitarium and a hospital and a home combined. The aim of every true physician is to prevent disease as well as to cure it. Consumption can even be cured at home, and it can always be prevented. Sanitarium life can be carried too far. If it neglects the reform and the prevention which can be effected in the home-life, it may become an evil. All the sick can never leave home to be cured, but all the homes can be made healthful, and when so made, disease will be prevented.

We need, therefore, in every house these fundamental things:

Pure air, pure water, pure sunshine, pure love. In the greatest of all historic struggles, that for the creation of the home, these things have too long and too sadly been neglected, or found impossible to secure. Even in the best of modern homes they are, in part, too frequently wanting; in the majority they are **amazingly absent**, and in the worst they are replaced by foul air, **germ-laden water**, darkness and degradation, which breed disease and increase the death-rate. Air, water, light, and love are possibly the most abundant blessings of the world, and civilization—so-called—has made them the hardest things to obtain. Ours the duty, the necessity, the pleasure, to remold our domestic lives so that each shall have them in splendid profusion. As it has ever been, the family is the elemental and primal unit of society, the home its out-working, and the house its mechanism. Upon these rest the health, dignity, nay the salvation, of social existence, that dream of Christian ethics and religion, the kingdom of God on earth.

CHAPTER II.

A SYSTEM OF PERSONAL BIOLOGIC EXAMINATIONS THE CONDITION OF ADEQUATE MEDICAL AND SCIENTIFIC CONDUCT OF LIFE.*

The ranchman has his annual round-up; the merchant his yearly account of stock and balancing of books; the machinist gives his engine a thorough going-over at regular intervals; every military organization has its reviews and inspections, every government its budgets—indeed, every financial hair of the commercial head is noted, and not a sparrow of the hunter, Success, falls to the ground unnumbered; those that do not fall are even more accurately numbered. But it is not so concerning the one piece of mechanism that conditions all these things, and that is the most valuable of all earthly possessions—the human body. For all practical consideration a man's body is his life, and yet civilization has come so far without any systematization of the business and mechanics of the entire single and personal life. The science of bodily living in its complete extent still awaits its discoverer. Numberless philosophers treating of the conduct of life have soared in superficial inexactness and easy generality over the heads and hungers of the individual liver, but they have utterly failed to formulate the physiologic and pathologic conditions of success and failure. All the biologic and medical special sciences have struggled toward an unreachd unity; all are single rays, as it were, awaiting the lens of a focalizing intelligence to illumine the concrete

*Presented to the Section on Practice of Medicine, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900. *Journal of the American Medical Association*, July 21, 1900.

image of our total physical appearance here. War has devised a rough and crude system of physical examinations for the would-be soldier; insurance companies have more accurately examined the bodies and life-prospects of their policy-holders to estimate their financial risks; through the Bertillon system, criminology has still more perfectly fixed the anatomic measuring of the bodies of the lawbreaker; the Amherst and Harvard examinations have looked into the muscular functions of a few students for four years of their lives; the psychophysic laboratory has measured a few neurologic reactions; the medical practitioner has found out a few ways of reaching backward to the etiology of some single diseases; a few hundred school children have been subjected to some tests as to growth and the influence upon organization of poverty and wealth. But all these, I believe, are sporadic and ineffectual hints of a coming science of man, based upon a thoroughgoing and repetitive system of physiologic and pathologic examinations which will ultimately give us a genuine and all-comprising science of anthropology based upon all the data, morphologic, physiologic, and pathogenic, of the entire individual life. Prophecy and prognosis are based upon a thorough knowledge of the past and present fact, a rigid understanding in a scientific sense of the evolution of the organism and of its present departures from a normal standard. For his children a foresighted man must wish such an accounting, such a prophecy and prognosis; and as to himself every intelligent adult, when he awakens to scientific consciousness, must try to look forward through the years, and reckon up his powers and possibilities of life. This most important function of prevision has heretofore been left to the gypsies, the palmists, the astrologists, and the clairvoyants! Is it a wise way for science to leave the individual struggler, unconscious and ignorant of his own body and its fateful laws, incapable of learning the scattered and ununified half-sciences blindly converging to some far-off unity of mutual helpfulness and life? The crowning work of scientists is to turn science into prescience.

Unification of the sciences dealing with the conduct of life; the making practical and useful our knowledge of the individual organism; and lastly to establish a scientific prescience—such are the ideals of a living anthropology.

Is it not at once plain that these ideals can be realized only by a system of periodic examinations and records made every year or every five years, throughout the life of the individual organism? Such a system of records may be held generally to comprise the following elements:

1. *The hereditary datum.*—The endowment at birth, the influence of heredity, must in every way govern and condition the development of the organism, and modify every reaction to environment. It is wise therefore in all ways possible to fix, at the opening of life, what is this datum of inheritance. Nationality, ancestral and genealogic histories, craniology, cerebrology, etc., help to make up the estimate of this factor.

2. *The developmental and historic record.*—Especially during the period of growth—childhood and adolescence—should the space between the annual or quinquennial systematic examinations be historically epitomized. The strains, work, illness, and tasks conquered or incomplete, are surely a necessary part of the life-chronicle.

3. *The morphologic or anthropometric examination is fundamental.*—In this the Bertillon system, modified, perfected, and expanded, or something similar, should form the basis of such a system of physical measurements, descriptions, and records, statistic and graphic, that any future variation of the organism would be detected in later examinations; and thus would be preserved the morphologic picture of the individual for the whole life.

4. *The physiologic record* would include the testing and tabulation of all the significant reactions and functions. These would be made up of all necessary dynamic tests of the muscular system; of statements of accurately observed metabolic and nutritional functions; the reactions and reflexes of each of the

special senses, and of those of the neurologic and psychophysis systems. The profound influence of habits, both positive and negative, innocent or harmful, should also be remembered.

5. *The psychic or intellectual datum* is one too carelessly ignored in scientific and anthropologic studies. The fundamental qualities of character, disposition, memory, sentiment, religion, reason, morality, education, etc., are powerful influences acting upon and reacting to the environment and to disease, and if they are left out of the count a most valuable determinant of scientific prescience is lost.

6. *The pathologic element* is one heretofore almost or utterly ignored in anthropologic studies, and in instructions as to the conduct of life. The profession should urge its profound importance. The examinations at stated periods should in large part consist of the records of the findings of expert medical specialists secured by all the arts and instruments of diagnosis at their command. All departures from health and normality that indicate pathologic results or tendencies in any organ, or in the organism as a whole, are absolute conditions of estimate as to present powers or prospects. One is almost inclined to think that the savings in medicolegal cases, by such a system of examinations, would defray the expenses of making them. Some time ago a railway company, after several years of legal proceedings, was forced to pay a man \$10,000 damages for intracranial hemorrhage said to have been caused by a fall from a car. When the man died there was found in his brain a bullet which had been received 25 years previously in the Franco-Prussian war, and this had produced all the non-feigned symptoms for which the railway had to pay.

7. *The factor of heredity* closes the circle, with the possibility of making more accurate the knowledge of the transmission of the individual endowment to the child. Successive generations are but the completion and extension of a single personality. The family is the realization of the incomplete individual.

Leaving out of consideration the questions of the onerousness

of the task proposed, and the apparent impossibility of carrying out so many observations, one may ask as to the feasibility of keeping the records of such a series. The answer to this query points to the most remarkable plasticity and adaptability of the modern plan of record-making by the card-system, with its ever variable and extensible use of loose leaflets or cards of different colors, numbers, ear-marks, sizes, etc. Photography, the phonograph, the cinematograph, the instruments of the physiologic and psychophysics laboratories, and those of every specialist in medicine, make it easily possible to condense the chronicles of all tests and examinations in an inexpensive and effective way. The postmortem records, and the preservation of the brains, and, perhaps, of the skulls of the subjects, would supplement the work.

As has been intimated, we already have the beginnings, the sporadic attempts, and detached parts of such a system of examinations. The Bertillon criminal records of the police bureaus, the anthropometric data of military examinations, the results of athletic and gymnasium tests, those of psychophysics laboratories, the medical examinations of school children, and those especially by life-insurance companies, etc.—all these indicate the thought, labor and expense which civilization is giving to the problem. But the most important of all contributions might be the case-books, hospital records, and patients' histories of physicians. Hardly a tithe of the precious material, however, is utilized. The waste of biologic data—wasted because not systematized and unified—in the lost records of physicians is appalling. The most valuable books in the world are the oldest city directories, scientific statistic records, etc., and more valuable still would in future years be the present-day case-books of scientific physicians, if they were well kept and illuminated by a statistical and scientific judgment. We now dump them into the pulp-mill.

Is it a foolish dream, is it an unrealizable ideal, that all these things might be preserved, and rendered of use to science and

humanity by some institution carried on by the government, by a university, or by a union of scientific and medical men, whereby the records of individual lives might be made so frequently, so continuously, and so scientifically that we should at least gather the inductive data for a genuine science of anthropology, pathology, and ethical biology? If governments could be prevailed upon to devote to this work one-tenth the money now squandered in war; if legislators could be prevailed upon to give to it a small proportion of their stealings and political plunderings; if a fraction of the money poured into the pockets of the ward and city bosses could be got; if a small percentage of that spent on comic opera could be shunted this way! If these are idle dreamings is it not perfectly possible that in future ages some wise legislator of some civilized government may convince his fellows that not only is this the duty of the national administration, but that the very beginnings of the system are already in operation in the national census-taking? In this the mechanism is really inaugurated, and needs but the inclusion of the civil service examination, the soldiers' entrance tests, and the governmental pensioners' medical examinations, to bring it a long way toward perfection. With the plan once determined upon, and the brain once found to gather the haphazard and discrete parts to an organic unity, but little additional expense would be incurred over that now spent in the separate systems. Indeed, the scheme itself is only an extended and a perfected bureau of vital statistics. Once such cooperation were started, the city and state with their criminologic statistics, the insurance companies with their accurate vital and pathologic records, and especially the medical profession with its systematized records of individual and social morbidity, and many other agencies, would be drawn into cooperation, and the bases of a truly inductive and physiologic science of civilization would begin to be laid.

While we wait for that millennial palace of Science we physicians need not be idle—nay, we may be at work in the quarries.

Our first duty is to reorganize, systematize, and make scientific our case-books and recordings of patients' histories. Let us study this great and neglected art so that these most precious fruits of our life-work shall not end in the pulp-mill. The lack of literary workmanship in making and keeping our records of disease is altogether deplorable. What is left to science of the life-work of a million physicians whose business has been with the most precious biologic facts of the world? Can we not perfect some bridge whereby the results of our life-labors can be carried over the stream of death and become the property of general biologic and pathologic science?

Surely then, our second duty is to make our science prescient, by means of the repeated examination at stated intervals of those patients whom we can convince of the necessity and wisdom of such a proceeding. It is a shame of medicine that in the one department of our science which we are most foolishly inclined to look down on with too much superciliousness, its practitioners have outrun us. The dentists have long recognized the need of periodic examinations of the special organ, regardless of symptoms, and they have at last driven the knowledge into the minds of their patients. Thousands of patients have their teeth periodically examined for beginning needs and diseases or to prevent them. If this is wise as regards the teeth, how infinitely wiser it would be as regards the kidneys, the eyes, the heart, arteries, etc., and the person as a whole. It is the shame of medicine and the basis of quackery, this symptom-treating and symptom-killing. What a horrible fact—this of the vogue of the pain-deadeners! Millions of dollars are capitalized in the business, and half or three-fourths of the work of our lives are devoted to the mere stopping or deadening of symptoms. But, as we all know, true medicine is to stop the cause of symptoms, to prevent the symptoms from ever arising. For many years, in my specialty, I have been begging that biennial ocular examinations should be made, regardless of "no trouble," regardless of "perfect satisfaction."

Absence of symptoms is no evidence whatever of absence of disease. No eye should ever be left over two years without reexamination. No spectacles can remain correct two years, because no eye ever preserves the same refraction, balance, and powers, for that period of time.

And what good also is the enucleated eyeball, or any piece of dead tissue, in the hands of the pathologist? Certainly only to prevent other living eyes and organs from becoming as these dead ones have. True pathology is surely knowledge of disease in the making. The pathologist's final problem is to prevent pathologic specimens from ever coming into his hands. *Quid* pathologist he must commit scientific suicide. Most of our fashionable pathology is the paleontology, not the biology, of disease; but was it not said of old, that it is better to be a living dog than a dead lion? How is disease in the making ever to be discovered except by examinations, continuous observation, of the living supposably-well organism?

Is it not even true of living disease that one-half the patients seen by the doctor are seen far too late? For paresis, locomotor ataxia, etc., and for many psychic diseases we do nothing, because we recognize their existence so late that nothing can be done. Had they been seen earlier injury could have been prevented. Surely in more than 25 per cent of my patients many years or whole lifetimes of suffering and disease could have been obviated. It is doubtless as true in general medicine. All good medicine inevitably tends to become preventive medicine; all good physicians labor to stop disease before it arrives. The whole ingenuity of the trained diagnostician is now expended on the problem of the earlier symptom. He is the greatest discoverer who finds the presymptom, or the symptom of the symptom; the greatest therapist is he who cures before the disease exists. he who starves the bacillus to death, he who stops the evil habit, thus preventing the malfunction that becomes organic disease. The best cat is the one that kills the rat that eats the malt that lies in the house that

Jack built. It is a truism that gout exists in the patient's system long before it causes a twinge of pain; the kidneys are ruined before the slightest subjective symptom is manifest; there may be heart changes indicating the existence of nephritis, which a single urinalysis may not detect; arteriosclerosis may be present prior to subjective symptoms, and the objective examination would detect it; there may be unsuspected diabetes without symptoms until examination of the urine reveals it—even with our crude prescience early urinalysis of the apparently well would often reveal the hidden evil at work sapping and mining toward the vital centers. Every oculist has often discovered albuminuria before the general physician suspected it. There are a hundred known intimations and auras of oncoming disease, but there are a thousand undiscovered ones, presymptoms, advance scouts and forerunners, to be learned when the slight and unconscious departures from normality are studied by examinations of the supposably well. Pathogenesis, not therapeutics, is the ultimate study of all medicine. And all pathogenesis is by no means running bugs to their holes: the greater number of life-wasting diseases are not bacterial in origin; and even the growth of the bacterial diseases depends on the soil in which they are sown.

I picture to myself a new field of work opening out before the poor plundered general practitioner. It must often seem to him that as a general he has been stripped of both army and enemy. One by one the specialists have robbed him until he has left hardly a soldier or a patient. The surgeon first took almost half of his army, and now threatens to relieve him of Colonels Appendicitis and Typhoid, and heaven knows of how many more officers which he formerly considered his very own. Then the aurist, the oculist, and the rhinologist deprived him of his special senses, and the laryngologist rendered him aphonic. If the obstetrician and gynecologist left him one or two of all his women folk, the rest-cure man and the neurologist soon alienated the affections of these hysterics—and they lived unhappily

ever after. The pediatricist stole his babies and the psychiatrist his mind; and, lastly, the gastrologist will not allow him to have all to himself, even a simple stomachache.

The truth seems to be that of all the specialists the generalist has been squeezed into the narrowest specialty, and the surgeon is grasping avidly at his one or two remaining comforts. Even the diseases of the lungs, stomach and kidneys are now claimed and we may soon expect to see such advertisements in the religious and daily newspapers as: "A new operation for neurasthenia"; "craniotomy for unselfishness"; "preventive inoculations in case of threatened breach of promise"; "vaccinations for antivivisectionists"; "damaged heart-valves surgically repaired while you wait"; "kidneys transplanted immediately following the next electrocution"; "complete maturation of the artificially fertilized ovum in our new twenty-first century incubator."

The family physician's function seems to be fast becoming that of adviser-in-general and referrer-to-others; the "last straw" is that ethics will not permit these others to divide their fees with him. Nothing, in fact, is left to him except to have permanent anorexia and to move to a climate in which house and clothing are not necessary—Porto Rico and the Philippines, for example—providentially supplied, without doubt, for this and similar tariff purposes.

But seriously, have we not gone too far with our specialism, and are we not thereby in danger of losing the coordinating sense and oversight of the organism as a whole? The specialist can not be dispensed with. By his aid and through his accuracy medicine must progress; but neither should the generalist be squeezed aside. He is even more necessary. It is his duty to teach his under-officers, the specialists, their proper places, and by his sane and large grasp of all the facts supplied by these subalterns, by his coordination of the work of each and of all with his own overlook of organism and life as a whole, he brings cosmos out of chaos, and organic unity out of hundred-eyed

and selfish diversity. The specialist is fatally inclined to treat the disease; to the generalist must be left the far more important treatment of the patient.

It may seem hard and impertinent to say to an audience of generalists that the generalists have been robbed because of their own fault and negligence. The so-called stealings of the specialists are in reality helpful and if rightly understood they leave the generalist his proper work. Life, it has been said, is made up of little things; and yet life itself is not a little thing. So it is with health, fulness of years, and utilization of powers; they all depend, medically and physiologically, upon little things, and yet compositely, they are "the greatest thing in the world." In the vogue of the specialist, the generalist is more than ever needed. If the aristocrats have usurped power, there is the chance and demand for a powerful king. The specialists are, or may be made, the assistants of the general physician, who needs their help and all the data they can supply, and whose supreme function it is to fuse the whole to a higher unity and to establish the secret relations in reality existing in all. There is no specialist who is not willing and glad to make full and systematic reports to the general physician of all his findings. It is his duty to the patient and it is the specialist's self-interest to do it well. He is not so stupid as to offend the referrer of patients. In this function the generalist has the whip-hand—and he should use it, at times.

And thus it happens that the desirable system of personal biologic tests sketched need not await the action of government, the university department, the city or state institute, the union of anthropologic societies, or the anthropometric and pathologic institution founded by private endowment. Let us earnestly pray and work for any or all these things; but in the meantime much may be done by medical men and societies to prepare for the larger and more perfect outworking of the scheme—nay much may be done toward the realization of its more distinctively medical features.

Based upon the fact actually felt by every physician, that a series of systematized periodic examinations of patients apparently well would often reveal beginning diseases, prevent future illnesses, and increase the vital values of life, every one can prevail upon certain patients, students, or members of his family, to undergo the necessary tests. The more intellectual and well-to-do citizens will soon realize the self-evident value of such work, and not only submit to it for themselves and children, but will be willing to pay an annual fee for the service. Specialists will be willing to contribute their results. The examinations need be only of the more fundamental and simple factors at first until the good-will, machinery, funds, and recognition of the significance and usefulness of the work grow.

In several ways these examinations themselves are the means of a striking self-education of the physician:

1. In systematizing and perfecting a method of record-keeping there is a subjectively psychologic as well as an objectively scientific result of inestimable good. It is a sort of liberal education. To adapt and perfect the card-system to this useful end; to summarize the results of all diagnostic methods; to formulate prognoses; to classify and epitomize so that the whole shall look to the personal advantage, as well as toward the progress of preventive medicine; and finally, to dovetail the combined result into general biologic science and to clarify the laws of heredity; all of this is labor worthy of the wisest selfishness and the best intellectuality.

2. In rendering accurate and mathematical all the known and recognized methods of medical testings, there is much to be learned. It is in catching sight of the forerunning indication of disease, the symptom of the symptom, the functional beginnings of organic abnormalism, that a large deal of progress lies. Who, *e. g.*, as yet, measures the blow or stimulus in taking the patellar tendon and other reflexes, with machine-shop accuracy, also the resultant excursion or reaction, chronicling the same in his notes, with absolute or approximate precision?

3. In the excursions into the border-land, but still closely related, domains of cerebrology, craniology, psychophysics, criminology, sociology, public hygiene, and all the rest—in learning to make these tests, and chronicling the results required in these studies, one enlarges the range of his subjects, broadens his personal and scientific outlook—in a word annexes with justifiable imperialism and expansion, the adjacent territories of his special science. Each gives his light, and, as in all beneficence, by giving, each increases his own as well as the general illumination. The stars go out but the day dawns.

CHAPTER III.

THE LIFE-STUDY OF PATIENTS, OR THE BIOGRAPHIC AND MULTIPLE BIOGRAPHIC METHOD OF DISCOVERING MEDICAL TRUTH.*

Most physicians busy themselves with the single illness of which the patient presenting himself complains, and medical practice consists almost always of such treatment of the temporary and single complaint. The repetition of the affection at a later time is treated in the same way. There may be some vague connection noted by the physician between the two or more illnesses, but, at least in cities, the rapid elimination of the old-fashioned family physician, who attended one patient and family for a lifetime, is fast making even that poor overlook impossible.

Concurrent affections, and those of organs treated by specialists, were, moreover, not noticed, and a dozen symptoms of minor diseases were not thought of, or were listed as discrete, and without causal or related nexuses. If any physician rose to a philosophic gathering of the facts of his individual patient's several illnesses, he hardly succeeded in looking over the entire life, and subjecting the symptoms and diseases of the whole personality to a rigorous analysis and coordination.

Lastly, none has ever thought of bringing a large number of clinical life-histories into comparison and producing a composite photograph of the complete pathologic findings. And just this method, one would think, would have been early seized upon as that certain to bring to view medical truths otherwise remaining hidden from the observer. The method as applied

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to 14 patients with one disease, has yielded unexpected discoveries and demonstrated a unity of cause and of diverse symptoms that was wholly unforeseen.

If one glances through the biographies of any 25 great literary workers he will find a strange and striking difference between the personal lives of perhaps half of the number and the others. Twelve or fifteen will be found to be comparatively healthy, while the others are constantly afflicted with much suffering. In some cases their physical diseases will result in the profoundest tragedies. Thus Gladstone, Goethe, Taine, Kant, Mommson, Gibbon, Zola, Verdi, Agassiz, Fiske, Longfellow, Lowell, Hawthorne, etc., leading sedentary and scholarly lives, possess good health, while we find that other men of the same callings and application to literature or science, endure lives of intense suffering. Of this class are George Eliot, Huxley, De Quincey, the Carlyles, Parkman, Browning, Wagner, Spencer, Whittier, Margaret Fuller, Lewes, Darwin, Nietzsche, etc. The attitude of the world, even of the medical profession, in the presence of disease has been one of fatalism. Indeed, the belief in fate, one may surmise, has been largely due to the strange and mysterious incidence of disease. Why one should be sick and another free from sickness has struck men's minds ever since the riddle of life worried the soul of the boil-pestered Job. So long as the physician was concerned with his patient's single and passing (or killing) ailment, he gained no large overlook to bring unity into the pathologic problem of a whole life, or of a number of lives. And viewing disease as an objective entity, studying it from the standpoint of morbidity, infectious or organic, does not yield the same results as in viewing it from the aspect of the patient, the whole life of the patient, and the whole lives of many patients. Take the 14 mentioned: If one physician could have treated all of them during their entire lives he would undoubtedly have seen that there was some single underlying unity and cause for all their afflictions. But as the single complaint was treated at one time by one, or even several physicians,

and as a hundred were consulted during their lives, all the cases remained discrete, mysterious, and utterly unexplainable. Moreover, looking into the minds of their physicians we find that not one had any conception whatever of the cause and nature of their patients' maladies, and not one agreed with the other as to treatment. A peculiarly instructive fact is also this: Many symptoms complained of by these patients were held by both patient and doctor to be merely accidental and concurrent, which were repeated in other cases, and which were, in fact, bound by a single cause into a strictly pathologic unity. By the method of focussing the clinical life and a number of clinical biographies into a composite whole, new truths at once break upon the observer which were necessarily hidden from the physician of the single day or year, of the single disease, of the single patient, and of the single life.

And the method is by no means of value only as to migraine or eyestrain; it will prove, I suspect, to have equally good results in other diseases. The study of clinical biographies will prove as illuminating in the etiology, cure, and prevention of many diseases, even in those in which we think all mysteries are explained by bacteriology, histology, or other objective methods. Just as the good physician treats his patient and not the disease, so general pathology needs to study the patient instead of, or at least in addition to, his disease. The sick man rather than the man's sickness, his life rather than his single illness, many lives instead of one—that is a method of eliciting medical truth which needs exploiting, and which will in the future bring unexpected light into our pathologic darkness.

In addition, I am sure that the results of eyestrain which I have discovered in clinical biographies are by no means all. In private practice I have gained glimpses too indefinite as yet to put on record, of further and possibly of as great influences of ocular malfunction in causing other morbid functions, or in influencing them. No truth is more certain in general biology than that long and oft-repeated function begets structure.

Inevitably, therefore, functional morbidity must produce organic or structural morbidity. In illustration of that thesis lies much of the progress of future medicine. The study and systematization of long and repetitive malfunction can be made only by means of the method of biographic clinics. That study largely lies in the hands of the family physician, when he will rise to his opportunity.

Our first surprise in these 14 biographic studies is that there have been so many sufferers. Without any extended search, and merely incidentally, I have, in all, found nearly a score of literary, scientific, or musical geniuses who were hardly suspected of having been so grievously afflicted. In their biographies were also allusions to many of their friends or distant contemporaries patiently enduring the insults of the same disease. And when one looks into the history of the disease as chronicled in medical literature, it is plain that from the earliest barbarism to the latest civilization a large portion of humanity has had the same disease. In medical practice the physician finds all over the world the malady tremendously prevalent and rapidly growing more frequent and more terrible in its life-wrecking consequences. One's amazement is beyond expression when, lastly, it is found that this disease of untold millions of the past and of others now living, is a confessed mystery to science. Its very name is an absurdity—the non-naming of a trivial symptom, generally not present, of a disease, the very organs affected being unknown, the symptoms indescribable, the cause unknown, the nature unknown, and all treatment absolutely resultless. This bizarre condition of scientific impotence is rendered still more farcical by the fact that, except in one case, not a patient of the 14, nor a physician of their hundreds, recognized the disease before them. They were utterly mystified, and did not even call it by any name. Even Nietzsche argued with his physicians that his terrible disease was not one-sided or hemicranic.

The fact of the extreme diversity of the symptoms of the 14

patients, of itself prevented their physicians from recognizing the single cause to which they were due. The nearest they came to it was a half-glimpsed, vague, and passing adumbration of the truth. It was in part a sort of flattery of the patient, usually by himself originally, that begot the theory that brain working caused suffering. The hundreds of columns of twaddle about "brain-fag" in the London and American newspapers in October, November, and December, of 1903, show the existence of the same superstition. A thousand brain workers have "brain-fag" but another thousand do not. It is plain that the explanation is badly in need of explanation. Intellectual work does not produce disease or suffering any more than muscle work. Evolution has made no such stupid blundering as that.

But muscle work with organically diseased muscles or blood-making organs does produce trouble, and just so brain work with morbid nervous organs may, and must beget morbid results. The physicians of our 14 patients never once asked if any of the organs put to such frightful labor by the intellect were abnormal. The study of the biographic clinics of these patients at once shows that the greatest, most delicate, most complex, most intellectual sense organ is, in literary activity, put to the greatest labor. Physiology long since demonstrated that in a large number of these eyes, their anatomy is imperfect, their function pathogenetic. The old truth will never be sufficiently well learned that morbid physiology is the source of pathology, that malfunction precedes and begets organic disease. This is forgotten in the avid study of the end-products of disease, and of the disease itself instead of the diseased patient.

The great error that intellectual or literary work *per se* produced the diseases of our 14 patients resulted in the rule of life, learned from experience, or half-taught by the desperate physician, to get into the open air. Thus these patients found it wise to "take a trip to Switzerland," "to go to Italy," "to walk the moors," "to take a vacation," "to run down to the Riviera,"

"to climb mountains," "to go on a jaunt to the seashore," etc. Often the greater part of patients' lives was spent in this way. The success of this empiric therapeutics was undoubted, but only so long as the out-of-door life was continued. With the return to sedentary life the old troubles at once resumed their sway. We now know that eye work, not intellectual labor, was the cause of the disease. But a thousand articles and books on "migraine" written during 300 years, came only so near the truth as the suggestion that "migraine" affects chiefly the educated and intellectual classes. And even this statement is not true, because it affects all eye workers in equal degree, whether they are readers, thinkers, litterateurs, etc., or simply sewing women, typewriters, and handicraft laborers. The fact suggests that with the older physicians their well-to-do patients were their chief concern, and the poor were relatively ignored. But the poor have the aristocratic disease just as frequently—if they use their eyes within reading and writing distance as incessantly as the students. The presence of astigmatism has nothing to do with the social or intellectual status, although it had much to do with the physicians' reports of cases, etc. The walking cure, as it may be called, was learned by bitter experience and usually by the patient himself without the assenting advice of the puzzled doctor, who did not know what else to do.

Note, however, that in the thousand books and articles on "migraine" the walking cure is not laid down as any part of the scientific treatment. The biographic clinic alone teaches that lesson.

The demand of the tormented system for walking and physical exercise is in astonishing evidence in the lives of nearly every one of the 14 patients studied. It undoubtedly dictated the *Beagle* and the *Rattlesnake* voyages of Darwin and Huxley, it drove Parkman to a fury of athleticism that was ruinous, and was the direct cause of the aphorism style of Nietzsche. In every one it took a peculiar coloring, but move they must or they would have gone mad, as Wagner said of himself.

The clearest medical advice to the migrainous "brain worker," the "brain-fagged," the "neurasthenic," etc., was that the stomach and digestion were at fault. Diet became the will-o'-the-wisp, which engendered a thousand cookery books, systems of diet, food rules, fads, institutions, cures, and crankeries, in reference to eating and drinking. All Europe seemed largely ordered by the needs of patients worshipping or bringing offerings of time, wealth, and lives themselves, to the altar of the great god Dyspepsia. All this was because in a certain, or uncertain, proportion of cases the digestion was less or more disordered by "migraine." No one has ever agreed with another as to what constitutes the symptoms of the disease migraine, but some migrainous sufferers have nausea and vomiting or other dyspeptic symptoms. That the superstition that these secondary gastric symptoms are primary and causative still rules the lay and professional mind, is demonstrated in every textbook and article written on the subject. The hundreds of brain-fagging, "brain-fag" correspondents of newspapers of the last few months show how living is the old idolatry.

"Migraine" and "brain-fag" are caused by astigmatism, but eyestrain causes many other morbid symptoms than those grouped under the nonsignifying and misleading terms. In no textbook on diseases of the stomach or of the digestive organs will one ever find a word as to eyestrain, and yet eyestrain possibly causes more of the diseases of digestion than all other causes combined. The study of the patients' single disease, or of the disease itself, would never have revealed this truth. Only the life-histories of the suffering patients make the fact apparent.

It is noteworthy how frequently proverbial and empiric wisdom forefelt the lessons here emphasized. One of Lincoln's maxims was, "Keep your digestion good; steer clear of the biliousness." Sir Benjamin Ward Richardson said that the would-be centenarian among other things should "work as little as possible by artificial light." Von Moltke, Sir James Sawyer, and many others, have advised strongly, regular out-

of-door exercise. Dr. Diet, Dr. Quiet, and Dr. Merryman, are old and famous physicians. The existence of the large number of spas, health establishments and resorts, cures, hydropathic institutions, sanitariums, and the periodic migrations to Italy, Switzerland, and sunny climes where out-of-door life is encouraged, are all to some extent products of eyestrain.

Most suggestive is the fact that these establishments, whether frivolous and fashionable, or scientific and curative, are based upon a regime which stops near use of the eyes. How fashion does this, need not be set forth. Take the best instance of the best class of these "waters" or "cures"—Carlsbad. In the first place the old superstition that there is anything mysteriously or miraculously therapeutic in the water itself is worthy of the days of opera bouffe, and it is far more wonderful that the humbuggery has been accepted by the world, lay and medical, so long. If one, any place in the world, will dissolve 15 grains of sodium bicarbonate and 25 grains of sodium sulfate in a pint of water, it would have all the therapeutic value of the Carlsbad spring. Add some citrate of lithia, and it would be far better than any spring water yet discovered. The cunning commercialism that sells water, the commonest thing in the world, at the price of wine, will probably not be extinct for centuries to come. That is the sugar of milk placebo which fixes the attention, while several other really important things are demanded with military authority: 1. A diet which lessens the stored energy of the organism. 2. Baths and other measures which increase metabolism. 3. An amount of walking and exercise that increases the outgo of force in normal or physiologic methods.

But note the ignored and revelatory fact implied in all this: All three methods reduce the excess or overstock of fat and nervous energy which is the basis of "gout," etc., but while they do this they absolutely prevent near use of the eyes. The "walking cure," the rest-of-the-eyes cure, that every poor eyestrain and migrainous patient has found by bitter experience so necessary, is the *sine qua non* at Carlsbad. This is the

way it is described by Henry Cunningham, C. B., in the *Nineteenth Century* for December:

So far as watering places are concerned, the only reason why they appear useful is that when a man goes there he is free from business, letters, etc.

The grounds belong to the town and are laid out in walks which extend over nearly 10 square miles of country. Along these walks in fair weather and in foul, in broiling sun or in drizzling rain, the wretched patient is compelled to toil. Up hill and down hill he must go, and the more up hill the better, until a pedometer in his pocket shows that he has walked 24,000 steps daily.

The diseases of eyestrain all show an excess of nervous energy, and all are dependent upon near use of the eyes. All are cured by draining off the excess of innervation through physiologic channels (walking, athletics, etc.), and stopping near use of the eyes. It is most suggestive and noteworthy that what cures "gout" cures the hundred sequels of eyestrain—and vice versa!

Eyestrain has a peculiar and powerful irritant action upon the nervous system. It begets a hundred differing results according to the nature, needs, and necessities of the individual, but all are summarized as an excess of innervation. Hence the demand of the organism for relief from the morbid stimulus, and for an outlet of the overflow by means of muscular action. Thousands of quotations could be adduced to show this. In addition to the two reasons given above, the eyes demand that (partial) rest only to be secured by the cessation of "near work," such as is gained in walking, etc.

All the treatises on migraine have failed to note this fact or its philosophy, and yet it is a symptom that is most characterizing and significant. It often governs the life, and makes or mars fortunes and dispositions. Upon it turns the whole success or failure of ambitions, and it surely colors and controls the quality of literary works as none other. This is at once manifest in the study of nearly all of our 14 patients, and daily stands plain in

the confessions of patients in the physician's office. It engendered a state of excitement and tension in them which had an injurious effect on personal character, and on the matter, style, and judgment of their writings. This is painfully evident in most of the 14, but rises to positive morbidity in Carlyle, Wagner, and to ruinous extremes in Nietzsche.

It is impossible, says George Eliot, for strong, healthy people to understand the way in which malaise (her euphemism for sickheadache) and suffering eat at the roots of one's life. It is at first sight strange that eyestrain may produce in some patients sleepiness, dulness, etc.—pure inhibitory effects, while in others the nervous system may be driven to a fury of irritation. Thus in the cases of George Eliot, Whittier, and Darwin, there was the most painful lassitude and exhaustion, while in Carlyle, Wagner, Nietzsche, etc., there was a morbid hyperesthesia and activity. Often both conditions may alternate in one patient. Although George Eliot was usually dejected, depressed, and tired, she speaks of "the excitement of writing," and the mechanism is seen in many sentences as, "My idle brain needs lashing." In Wagner, eye work usually produced feverish intensity and irritability, and yet he says, "Sometimes I stare at my paper for days together." But it is true, as he says, that exaltation was the rule and ordinary calm abnormal. Hundreds of poignant quotations would vividly demonstrate this. In the same way Carlyle had to work with his "nerves in a kind of blaze," "in a red hot element," "with his heart's blood in a state of fevered tension," "in a shivering precipitancy," etc., and yet sometimes it was inhibition instead of hyperesthesia, and he sat at his desk, stared at his paper, his imagination would not work, etc. Writing stirred Mrs. Carlyle's head to "promiscuousness," and always finally exhausted her. It "stirred up" Parkman's head, produced "a highly irritable organism," and he stopped to avoid greater troubles, as did also Spencer. But in Nietzsche it drove the sufferer to a "horrible earnestness," "a nervous excitability," "an unendurable *spannung*," "a subterranean

fire," etc. To use his own words, "The vehemence of the interior vibrations was frightful." It drove Darwin to the sand-walk and De Quincey to opium. In almost all it produced melancholy, helplessness, and despair; made physicians think Parkman and Wagner and Nietzsche were insane, made several believe death was at hand, begot the resolve of suicide in Wagner, and directly caused the cerebral paralysis of Nietzsche. With the biographic overlook one realizes that this hyperexcitation and torment of the nervous system caused by eyestrain, demonstrates a causal unity of the whole consequences of athleticism, walking, dieting, touring, hydropathizing, irritability, diseased literature, melancholia, pessimism, and general morbidity.

Colds, influenzas, etc., are not alluded to in the treatises on migraine, and it is only by the study of the life-records of migrainous patients that the truth becomes manifest that inflammations of the mucous membrane of the upper respiratory organs are often caused by eyestrain. In the individual illness or even individual patient, the relation is overlooked. Like a dozen other diseases, the common cold or grip is looked upon as a stroke of fate, and to be accepted without curiosity as to cause. But even a crude science is finally driven to the supposition of a nondiscovered cause mysteriously at work. Whatever role the microorganism may play, the "soil" (as always) must be prepared. All rhinologists now admit that some mysterious cause is at work. One great physician writes of colds and influenzas that "they may be due to microorganisms, or local conditions in the air passages, but these maladies, as we now know, both depend to some extent on a special predisposition in the sufferer, having its root in the nervous system, and both leave their stamp on that system and gradually undermine it." And only biographic clinics show that eyestrain is one of these frequent "special predispositions of the nervous system." The seemingly illogic incidence of these inflammations of the mucosa in some patients, and the escape of others, is, at least in part, explained by the fact that when the ocular reflex expends itself

continuously on one set of organs, especially those of the digestive system, other organs are freed from the attacks. Thus Carlyle, Huxley, Margaret Fuller, and Darwin have no colds, De Quincey but few, Whittier, Lewes, and Browning, more. Wagner saw some connection when he wrote, "my catarrh has developed so that I may hope it will rid me of my usual winter illness." Nietzsche was tormented with colds, hoarseness, etc., all his life, and Mrs. Carlyle and George Eliot seemed never to have been without influenza, grippe, sore throat, etc. In private practice the relation of influenza, colds, etc., to eyestrain, has often been noticed. Colds alternating with the other symptoms, freedom from the one set replacing suffering from the other, has been noticed. And colds, also, as a terminal affection, *i. e.*, upon the more permanent disappearance of other symptoms, are especially noteworthy. George Eliot's only disease on the day of her death was supposed to be laryngeal sore throat. Lewes also died a day or two after taking "cold."

After I had several times noticed the strange manifestation of peculiar and unaccountable eczemas, rashes, etc., as the terminal stages of ocular headaches and of sickheadaches, I found in the reports of some old physicians a clear statement that "herpetisms" were sometimes reported as the sequels of migraine. Modern authors treating of migraine know nothing about this. Wagner had repeated attacks of a "cutaneous malady," and "continuous attacks of erysipelas" which tormented him much of his life. I remember especially one patient who had most distressing attacks of "hives," and various other eruptions, pronounced by the best dermatologists atypical, and which were puzzling to them, and intractable. These attacks were sometimes called acute urticaria, psoriasis, generalized eczema, pityriasis rosacea, etc. In looking back over her life, this very intelligent patient now remembers that the eruptions were always connected with extreme use of the eyes, headache, and especially sickheadache. All of these symptoms in her case have since been repeatedly demonstrated to be due to eyestrain. They recur with leaving

off the glasses, and are relieved at once by proper correction of the eye defect. Since the above was written, a most carefully observed and excellently reported case has been called to my attention. It was in the practice of Dr. Charles A. Oliver, and published in *The Philadelphia Medical Journal*. The repeated demonstrations that the urticaria was absolutely caused by eye-strain is most convincing. Observations would doubtless prove the sequel more frequent than is supposed.

Older authors writing of migraine also emphasize the fact that pareses, partial paralyses, anesthetics, disorders of sensation, etc., are frequently complained of by patients suffering from migraine. The most common of these symptoms appear to be paresis, numbness, and tingling (as of "pins and needles") of the hands and arms, extending to the neck and throat, with temporary loss of speech and confusion of ideas. Nietzsche, Wagner, Mrs. Carlyle and others, had similar symptoms, called "rheumatism" by biographers, patients, and physicians. One wonders how many such patients have suffered from such "rheumatisms." There is not a little mystery about the "gout" of Lewes and about Parkman's life-long articular trouble and lameness.

There is one important symptom of migraine that has almost universally been omitted by the writers of textbooks, but which is present in almost every case of the disease, and in all cases of severe eyestrain. This is insomnia. Every one of the 14 patients whose cases are reported in *Biographic Clinics* complained of it bitterly, and of most the inability to sleep was the chief of all complaints. In the case of the individual illness of a single patient the physician overlooks the symptom; in the life-histories it appears with pitiful reiteration.

There is one other symptom often alluded to by the patients of biographic clinics, which is frequently spoken of by patients in the oculist's office. Beside all those complaints that can be named or described, there is a nameless and indescribable suffering that often afflicts them as powerfully as the localizable

and describable ones. They tell you they can not tell how they suffer, nor where. It is "dreadful," "horrible," "inexpressible," etc., and it is real. That is all they can say.

According to the older conceptions, migraine was an absurd name of a trivial symptom, not generally present, of a disease beginning with the trephining savages of barbarism, widely prevalent in all human history, and vastly increased both in severity and numbers attacked by every advance in civilization. It is today wrecking millions of lives and ambitions, often making of them tragedies of needless suffering. The cause and nature of the disease is utterly unknown, and even its location, or the organs in which it is seated, are also unknown. The very symptoms are indescribable, and reporters and writers differ greatly as to what they are. There is no treatment whatever that cures, none that even relieves. Thus the profession stands today impotent before its opprobrium, and despairing of resolving the mystery, has turned its back upon it, eager only to explain some organic or infectious disease that does not cause a hundredth of the suffering that is due to migraine.

And yet a glance at the actual and entire life of migrainous patients, and especially of several such lives, would at once have revealed the secret. Few cases, or perhaps no cases of the disease ever occurred except as a consequence of near use of astigmatic eyes, and every case is curable or at least preventable by proper spectacles.

It goes without saying that in the organism wrecked by a life of suffering, all reaction is killed; such cases, however rare, exist, and cure of them is impossible. But even in them some alleviation or change of symptoms is wrought by proper glasses. There is also, rarely, a habit of disease which is hard to break up, although in migraine it is usually to be construed as an unconscious confession of lack of skill in refraction. Migrainous diseases are especially easily controlled and are almost always extinguished even in the most severe and long-continued instances.

Moreover migraine is only one of the many results of eyestrain. The word should indeed be abolished, as it is utterly meaningless. Its two chief symptoms are headache and sickheadache, and these words should be used instead of migraine. When such symptoms are caused by evident organic, local, or systemic disease, there can be no mistake in the diagnosis. Yet even in such cases the pseudoeyestrain symptoms, and also in the so-called "mimicries" of eyestrain, scientific spectacles will probably produce an alleviation or modification of the symptoms that is most noteworthy.*

The continuance of all migrainous or eyestrain diseases indeed emphasizes the great need I have previously urged† of a systematic and periodic reexamination by scientific specialists, of the bodily organs and functions throughout life. Apart from the objective scientific value of such tests, they would often reveal, and thus prevent further ingravescence of pathologic conditions and trends, of profound value to individuals and families.

*But it must be remembered that the vast majority of so-called refractions are worthless. In Europe all refraction may be said to be unscientific, inaccurate, and without power to cure the symptoms and sequels of eyestrain. If attempted by objective methods alone, if done without a mydriatic in those under 50, if anisometropia is ignored, if the most absolute accuracy is not secured in estimating the least astigmatism, etc., the work is without therapeutic value. There are at least 68 reasons why glasses may prove incapable of curing the diseases caused by eyestrain.

†"A System of Personal Biologic Examinations the Condition of Adequate Medical and Scientific Conduct of Life."—*Journal American Medical Association*, July 21, 1900.

CHAPTER IV.

"THE SEVEN DEADLY SINS" OF CIVILIZATION.*

If we study the morbidity-rates and the mortality-rates of the recent years during which statistics are of any value, we are struck by the fact that despite the reductions in both, with consequent lengthening of the average life-length, the figures are still most unsatisfactory. Our vaunted civilization, if life is the most precious thing in the world, has not been very effective. It seems to be a most reckless squanderer and spendthrift of that life it supposedly exists to save. No medical man nor any philanthropist may seriously discuss the horrid sneer that there is anything of more value than lives and life. Much of civilization undoubtedly proceeds on the assumption that "money," "progress," politics, etc., are worth more than sacrificed lives, but it is precisely such civilization that good and honorable men are working to crush out. Civilization can rationally be viewed only as a tool or instrument. For what does it exist except for the civilized?

There is a big doubt creeping into the minds of careful students: Is the tool of such extravagant value? Is not something essentially and mightily wrong about the tool itself? Upon the economic side, democracy and trades-unionism are seeking to validate one sort of answer. From other standpoints, preventive medicine, charity and charity organizations, pedagogy, etc., are seeking other solutions. Medicine and preventive medicine have been able to do a great work, but they have been confined in very narrow limits as regards both time and kinds of diseases attacked; latterly indeed they have utterly lost their heads over their success, and gone off into furious crazes over

* *The Medical Standard*, December, 1907.

organic pathology, laboratory refinements, and a useless "science which is mostly unscience, leaving the causes of the great ills afflicting humanity untouched and unholpen." The origins of most structural diseases lie in functional and habit abnormalities, and of these the official pathology is incurious; it unconcernedly allows them to run riot, until the death may be foolishly ascribed to the organic diseases, which in reality are merely the executioners of the long-precedent functional diseases. In preparing the soil, also, for the infectious and structural diseases, the role of the functional and habit-diseases is immense, and more strangely neglected. One way, however, of envisaging and studying the facts has been almost wholly unthought of—the historical. And of all the historical methods, I am unaware that the viewing to be described below has occurred to any writer. I can only roughly sketch the outlines, because I have not the knowledge required for the accuracy and fullness that are necessary in the undertaking.

In a word, light may be thrown upon the incidence of disease, and upon the genesis of many functional diseases and morbid habits, by a study and precisionalizing of the possible factors introduced by civilization. We are likely to forget that this civilization of ours is a very recent thing, of the last hundred years, let us say, in its effect upon millions, upon the masses of our people. And even in the last 25 years the activity of these possible new factors and habits has become amazingly intensified and generalized. The forces of civilization brought to our century a type of human organization fairly homogeneous and stable, which immediately became the subject of many wholly new foods, habits, conditions of life, etc. What are these novel factors of possible disease and morbid habits? Take, for instance:—

I. TOBACCO.

Tobacco, of course, is an American invention, said to have been first found in Cuba in 1492, and used by the Spaniards in

Yucatan in 1520. Sir John Hawkins brought it to England in 1565, and Sir Walter Raleigh and Sir Francis Drake took it home in 1586. It was manufactured, at first, in England, only for exportation—an illustration at once of England's commercialism and of her conservatism. A proclamation was issued in 1584 against it, and the "Counterblaste against Tobacco" by King James I is well known. Duties of 6s 10d per pound were laid on it in 1614, and its cultivation was prohibited in England in 1684. Over in Ireland, Patrick was allowed his pipe or quid in 1789, but the opposition was so great that in 1832 an act was passed to buy the tobacco grown in Ireland and destroy it. The quantity consumed in England in 1791 was 9,500,000 pounds and in 1815 about 15,000,000 pounds. In 1850 the amount had risen to about 37,000,000 pounds, and in 1904 to about 83,000,000 pounds. Not until 1886 was permission given to grow the plant in England.

It is astonishing that since philosophizing began, even sensible men have fallen into the absurd delusion that the universality of a habit axiomatically argues for its beneficence and advisability. The custom has degenerated into an old saw that that which is everywhere practiced by everybody is right. It is quite on a par with "Whatever is is right," and *vox populi, vox Dei*, all of which mean that we like to find foolish excuses for doing the evil things we wish to do. Stephenson has even gone so far as to write: "Lastly (and this is, perhaps, the Golden Rule), no woman should marry a teetotaler, or a man who does not smoke. It is not for nothing that this 'ignoble tabagie,' as Michelet calls it, spreads over all the world. Michelet rails against it because it renders you happy apart from work."

Did one not fear absolutes, general rules, universal laws, and all that, he might more sensibly conclude that a custom is pernicious just in proportion as it approaches universality.

According to estimates kindly made by the Commercial Museums of Philadelphia under the direction of Professor

Wilson, the per capita and total consumptions of tobacco, by the chief nations of the civilized world are as follows:

	Per Capita.	Total Consumption.
United States (1904).....	5.40 lbs.	440,000,000 lbs.
Germany (1903-4).....	3.44 lbs.	201,783,000 lbs.
Russia (1902).....	1.10 lbs.	150,244,000 lbs.
France (1902).....	2.10 lbs.	84,393,000 lbs.
United Kingdom (1904).....	1.95 lbs.	83,378,000 lbs.
Austria (1902).....	3.02 lbs.	78,755,000 lbs.
Hungary (1903).....	2.42 lbs.	47,905,000 lbs.
Belgium (1904).....	6.21 lbs.	44,273,000 lbs.
Italy (1902).....	1.05 lbs.	34,549,000 lbs.
Canada (1904).....	2.74 lbs.	15,400,000 lbs.

It must be remembered that these figures of several years ago do not exhibit the great increases in the consumption that have been taking place, and that in some countries are now proceeding at a more rapid rate.

Effects of Tobacco.

The fact which blocks all accurate investigation of the problem as to the effect of tobacco upon health, disease, and mortality is our nearly utter ignorance of the effect of small, repetitive and continuous doses of this powerful and much used drug. There is no "science" whatever concerning the results of the habit to be found in the textbooks on *Materia Medica* or in medical literature. And yet what physician observant of himself and his patients doubts that it is often, perhaps always, a pathogenetic factor, puzzling, contradictory, mysterious, as it may be? Each individual's limits and reactions differ, but it is evident that limits and reactions exist in every case, and are carefully watched and guarded by many. The relation to digestion is certain; the effect in organic disease of the eyes is indubitable, and every careful physician has in his mind the use

and abuse (how impossible to separate!) in his questionings of patients. But until pharmacology and science attack the problem in a serious and thoroughgoing way, the injurious influence of continued and repeated doses of tobacco upon the health of civilized people will be only a guess. An investigation incited by some scientific philanthropist, institute, or laboratory would be of incalculable service both to science and to humanity.

A French physician* has studied chiefly historically the effect of tobacco-poisoning, and another† has found that general paralysis, tabes, encephalitis, hypochondriasis, muscular atrophy, etc., may be caused in this way. Solly‡ believes that the reproductive powers are extinguished by it. In the *Medical News* of August 26, 1905, Dr. Robbins of New York reports two clear cases of nicotine-poisoning. The reduction of the normal quantity of free hydrochloric acid in the gastric juice seems probably due to tobacco.

For a period of eight years, it is said, the senior class of Yale College were carefully examined to determine, if possible, the question of the physical effect of tobacco smoking. It was found that those who did not use tobacco were twenty percent taller than the smokers, twenty-five percent heavier, and possessed sixty-six percent more lung capacity. Probably the best epitome of professional opinion is that gathered in *The Practitioner*, Vol. LXXV, No. 1. Nothing new or decisive is reached as a result, and the editor, in summarizing the discussion, takes the customary standpoint that abuse, of course, may be due to the habit, that the custom of smoking by boys is wrong, but not sufficiently so to warrant any control by law. Fun is, indeed, poked at the "faddists" who are seeking to control the abuse both in this country and in England. Everyone is to judge for himself, and the spirit of the editorial principle of *laissez faire* is shown by the quoted jingle:

* Foussard, *De L'Empoisonnement par la nicotine et le tabac*, Paris, 1876.

† Druhen, *Du Tabac*, etc., Besancon, 1867.

‡ *The Lancet*, 1857.

Cats may have their goose
Cooked by tobacco juice;
Still, why deny its use
Thoughtfully taken.

Now, doubtless, professional opinion as regards the use both of alcohol and tobacco has been often dictated by the personal habits of many medical writers. The purely scientific or clinical facts, moreover, are hard to get at. The question is not as to the physiologic and single dose nor the very moderate use, but relates to the persistent use, the long continued habit, and the effects of overuse and abuse. No data are at hand to determine such questions, and the matter thus comes down to the attention of careful clinical observers, the collection of isolated cases and facts, and attention spread over many years by exceptionally shrewd men, both patients and physicians. There is an old story which illustrates too well the attitude of some physicians:—Strict rules as to diet, etc., were laid down to the poor patient by the grand medical adviser, ending with a stern command, "and one cigar after each meal!" In a week the woe-begone sufferer returned worse than ever, saying: "I have carried out your orders, doctor, accurately, in everything except as regards tobacco. I have never smoked before this and every time I try to smoke as you said, after each meal, I become sick as death, vomit, and it takes 24 hours to recover; I can not do it!"

Habitual and Excessive Smoking.

All agree that habitual smoking, and especially of cigarets, by boys, is most injurious; it is a fact which should give pause to the easy-going advisers. If harmful to the young, why not to those who are older, particularly if carried to excess? At least a new clinical law is suggested as to the action of drugs on the young and upon older patients. Again, if tobacco is not harmful to men, why should women be excluded from the supposed harmlessness and admitted pleasure of smoking?

Some other principle than an esthetic or social one must be allowed to obtain, and one must begin the study of the action of drugs on the male as contrasted with the female organism. The morbid effect of much smoking on special organs, the eye especially, the tongue and throat, etc., and frequently upon other tissues and functions, is frankly admitted. It is in the observation of every experienced physician that smoking often has a speedy and decided effect upon the appetite, digestion, etc. A great billiard-player who does not smoke or drink says he is sure of winning when his opponent is a smoker. A study of idiosyncrasy and the different effects in individuals is evidently highly desired, and above all, the cumulative results of long habits and excess. What is excess? Surely ten cigars or pipefuls a day is excess, and is bound to produce disease. Just as surely hundreds of thousands of Americans are smoking to excess. But excess in individual cases may be only three cigars, or even one, a day. Who has sought to determine the conditions and signs of the physiologic dose when habit or slow absorption and subtle effects are sought?

New factors are also coming into play, *e g.*, the qualities and morbidity-producing conditions of tobacco from different countries, and from different grounds, even from different factories. The rage for luxury and show is modifying the growing of tobacco and manufacture of cigars, and proceeding to such lengths that cigars, enormous in size, and powerful in effects, are "sporting," cigars which cost from 25 cents to a dollar or more each; and is it sure that these expensive cigars contain no drug except pure tobacco? It has come to my personal knowledge that cases of severe although mysterious diseases and ill-health have existed in which smoking was finally demonstrated to be the source of the mischief, after all other theories and diagnoses had been proved false. The whole subject needs a rigorously scientific investigation. In the meantime busy physicians should be constantly on guard not to overlook tobacco as an unsuspected cause of great mischief.

II. COFFEE AND TEA.

According to a Chinese legend, tea was brought into China from India about 500 A. D. The plant has been found wild only in Assam. Tea was brought to Europe by the Dutch in 1610, and in 1657 it sold in England for \$30 or \$50 a pound. Pepys drank his first "cup of tea" in 1660. In 1728 the prices were from \$3 to \$6 per pound. Americans had something to say about tea in 1773 when 17 chests were destroyed in New York and 340 in Boston, not wholly for hygienic reasons! In 1830 about 22,000,000 pounds were consumed in the civilized world, exclusive of England, which used about 30,000,000 more. In 1904 the English imported 256,000,000 pounds. The coffee tree was conveyed from Mocha to Holland about 1616, and to the West Indies in 1726. Coffee was brought to England in 1641, the first coffee-house was opened in Oxford in 1650, the first in London in 1652. Coffee-houses were suppressed, for only a short time, in 1675.

Just as the recent cheapening and ease of transportation has enabled the entire world to get tobacco, so it is with coffee and tea. The figures, approximately, are as follows:

Coffee.

	Per Capita.	Total Consumption.
United Kingdom (1904).....	.671 lbs.	28,783,000 lbs.
Germany (1904).....	6.63 lbs.	396,205,000 lbs.
Holland (1903).....	14.39 lbs.	78,164,000 lbs.
Belgium (1904).....	17.81 lbs.	125,996,000 lbs.
France (1903).....	6.27 lbs.	245,599,000 lbs.
Austria-Hungary (1902)	2.05 lbs.	99,207,000 lbs.
United States (1904).....	11.75 lbs.	960,879,000 lbs.
Australia (1900).....	.58 lbs.	2,154,000 lbs.
New Zealand (1900).....	.27 lbs.	204,000 lbs.
Canada (1903).....	1.22 lbs.	6,765,000 lbs.

Tea.

	Per Capita.	Total Consumption.
United Kingdom (1904).....	6.00 lbs.	256,660,000 lbs.
Russian Empire (1903).....	.95 lbs.	132,256,000 lbs.
German Empire (1904).....	.12 lbs.	6,903,000 lbs.
Holland (1904)	1.59 lbs.	8,778,000 lbs.
France (1903).....	.06 lbs.	2,245,000 lbs.
United States (1904).....	1.34 lbs.	109,623,000 lbs.
Australia (1904).....	6.93 lbs.	23,837,000 lbs. (1903)
New Zealand (1903).....	6.29 lbs.	5,233,000 lbs.
Canada (1904)	5.60 lbs.	23,969,000 lbs. (1903)

That the chief chemical constituent is the same in both coffee and tea, and the physiologic effects of their use also much the same, is further borne out by the two tables which complement each other closely. The less coffee, the more tea, or vice versa, is a fairly accurate statement. It is impossible to say just what number of pounds of average coffee is equal, as a physiologic dose, to one pound of the average tea. Therefore adding together the per capita consumption of both is inaccurate. If we roughly estimate that there is 0.66½ percent of caffein (or thein) in a pound of coffee and 2.5 percent in a pound of tea, we may as indefinitely reckon that the total per capita consumption of caffein in both coffee drinking and tea drinking to be as follows:

Total Per Capita Consumption Caffein.

United Kingdom.154 lbs.
Germany047 lbs.
Holland135 lbs.
France043 lbs.
United States.112 lbs.
Australia177 lbs.
New Zealand.161 lbs.
Canada148 lbs.

Because many adults drinker consume several times the average per capita consumption, it follows that considerable numbers of large drinkers of tea and coffee may be consuming enormous amounts of caffeine annually. A valuable inquiry would concern the reasons why some nations use so much more than others. To get more closely to the heart of the problem would be an investigation as to the existence of a greater percentage of certain diseases in the countries using several times more caffeine than others.

The consumption of coffee is rapidly increasing. In the United States, Germany, Holland, United Kingdom, Belgium, France, and Austria-Hungary the combined consumption has increased about 60 percent, from 1,140,740,000 pounds in 1884, to 1,816,447,000 pounds in 1904, while the relative increase of population has been only about 30 percent in the same period. In our country the consumption has almost doubled in the same time, and, roughly speaking, we consume one-half the product of the entire world, at the last estimate, about 14 pounds per capita.

Physiologic Effects.

There is, of course, some difference between the physiologic effects of tea and those of coffee, but with the exception of the tannin and its effects upon the digestional system, both have, in general, not widely dissimilar consequences. An English physician, Dr. John H. Clarke, says:

"Persons addicted to tea do not always drink it; cases occur in which the tea habitue eats it. In one case of this kind, the victim, a woman who ate quantities of tea, actually developed delirium tremens. This, though an exceptional occurrence, shows the power of the drug over the nervous system and, of course, it is just for its stimulating power that tea is taken. Many people do not understand how it is that they have such an appetite for tea, when they have little or no care for any other

meal—if we except the morning cup of tea brought up to the bedroom, without which they would never get up at all.

"The reason is this: The sinking, empty feeling, accompanied often by irritability, low spirits, and shortness of temper, means that the stimulating effect of the last dose of tea is passing off, and the stage of reaction setting in. It is just the same with the tea drinker as it is with the alcohol drinker, when the effect of the last dram is passing off another must be taken to keep up the stimulating effect. Thus the vicious circle is kept up. And what is the effect of it? The effect is an increased wear and tear on the nervous system. Tea belongs to a group of nerve stimulants, of which erythroxylon coca (the source of cocain) coffee, and cocoa, are also members, which enable a person to get more out of himself in the shape of mental or bodily energy than he would be able to get without them. This is drawing a bill on the bank of his nervous system, of course, and the bill will have to be met. If the emergency is a passing one, the bill will be met by food and rest, and no great harm will be done. But this is not the usual case, and when once a habit is established, an abnormal rate of wear and tear will go on, and this results in a fruitful crop of cases of that latter day fashionable complaint—neurasthenia.

"These observations are for some countries and individual cases generally, as true as they are important. It is very desirable that the insidious ill-effects which may be produced by over-indulgence in an intoxicant of such world-wide distribution and relative unobtrusive properties, should be kept prominently in the public eye. The same may be said of coffee."

Constitutional Effects.

Dr. Clarke further urges as to the constitutional damage effected in many directions by tea drinking: "Allied to neurasthenia, and nearly always associated with it, is dyspepsia of the nervous or flatulent type. Tea can produce any one of

these and all combined. Another effect of tea is to produce anemia. Servant girls especially are great tea drinkers, and drinkers of the strongest kind of tea. To this habit much of the anemia and dyspepsia from which they suffer is due. Tea contains not only thein—the active principle which has the stimulating effect on the nerves—but also much tannin. It is owing to this latter that much of its indigestion-causing properties are due. 'High teas' are a digestive atrocity. Tea turns meat into leather; and all who are not equal to digesting leather should carefully avoid this mixture. The cheaper teas, so much in use now—those which give the people 'the most for their money'—contain the most tannin. A tea taster informs me that if the infusion of these teas is left in the tasting cups for any time it will eat off the enamel; from which it is easy to understand the effect the infusion produces on the human stomach."

Again, as with tobacco, there is no scientific knowledge of the direct, indirect, and remote effects of small and continuously repeated doses of coffee, or caffeine, upon the human system. And, rivaling tobacco, and alcohol, and sugar, in the enormous amounts consumed, and the far greater universality of the consumption (women and even children sharing), the lack of scientific knowledge becomes even more striking.

The "coffee-heart" is well-known by medical men, and the sacrifices that soldiers, "neurasthenics," etc., will make of food and other necessities or comforts to obtain coffee makes one wonder whither we are trending. The number of people who are satisfying, or cheating, or abnormalizing their systems with coffee (or tea)—without food, practically, for breakfast, with strong coffee in its place—also provokes, or should provoke scientific study by hygienists. It is claimed that tea and coffee are becoming rivals of alcohol as pathogenetic factors. Tea-drunkenness and coffee-drunkenness are becoming increasingly recognized as such.

III. ALCOHOL.

Although the drinking of alcoholic liquors and although even drunkenness was not unknown in ancient and medieval times, it is only in the last few hundred years that the stronger alcoholic drinks have become habitually used by the great mass of people. The latest figures obtainable are as follows:

Consumption of Spirits, Wines and Malt Liquors.

	Total Consumption Gallons.	Per Capita Gallons.
United States (1904).....	1,494,191,325	18.28
United Kingdom (1900).....	1,500,709,000	35.42
France (1903).....	289,103,000	7.41
Germany (1903-4).....	1,782,778,000	30.77
Russia (1902).....	149,451,000	1.08
Italy (1903).....	6,726,000	.20
Austria (1902).....	492,043,000	18.42
Hungary (1903).....	38,383,000	1.93

Whisky, Brandy and Other Distilled Spirits.

	Total Consumption Proof Gals.	Per Capita Gallons.
United States (1904).....	121,101,997	1.48
United Kingdom (1900).....	58,318,400	1.38
France (1903).....	72,324,600	1.85
Germany (1903-4).....	124,313,300	2.11
Russia (1902).....	174,031,000	1.26
Italy (1903).....	11,150,400	.34
Austria (1902).....	82,526,700	3.09
Hungary (1903).....	43,588,000	2.19

100 "THE SEVEN DEADLY SINS" OF CIVILIZATION.

	Total Consumption Gallons.	Per Capita Gallons.
United States (1904).....	43,316,636	0.53
United Kingdom (1900).....	16,646,900	0.39
France (1903).....	1,342,830,600	34.73
Germany (1904).....	124,408,000	2.08
Spain (1903).....	331,584,000	17.82
Italy (1903).....	928,531,000	28.06
Austria (1903).....	156,362,000	5.85
Hungary (1903).....	74,628,000	3.75
Portugal (1903).....	71,854,000	14.12

The pathologic evils, hepatic cirrhosis, the scleroses, etc., are now so well recognized as the results of chronic alcoholism that it is unnecessary to go into the details.

"Hospital physicians of experience," says an authority, "will state that directly or indirectly, alcohol is responsible for over 50 percent of the diseased conditions that they meet with in the wards. Coroners in large cities only know too well that the cases of suicide, murder, and other criminal acts that they are called upon to investigate show in the majority of instances a perverted mentality due to alcoholic influence. Police courts, asylums, and destitution generally speak all loudly of the curse of alcohol in some shape or form." Of course, it is the experience of all of us that these statements are substantially true.

As a powerful factor in social devolution, personal and family degeneracy, and in producing the needlessly high morbidity and mortality rates, the role of alcohol is understood, acknowledged and deplored. The scientific status is also far better known, and has reached such a degree of accuracy and recognition that the world is becoming aroused to the magnitude of the evil. The efforts to withstand and conquer it, however, are almost unavailing. While alcohol drunkenness may be decreasing

somewhat, "steady drinking"—a worse evil—is increasing in many or most countries, and is the real problem which preventive medicine and public hygiene should take in hand.

IV. SUGAR.

Sugar, according to Strabo, was found 325 B. C., in the East Indies. It was prescribed as a medicine by Galen in the second century. It was brought into Europe from Asia in 625 A. D., but how little of it was used may be seen from the fact that at the breaking up of the Roman Empire candy sellers carried it through Europe upon their backs, to retail to children, young or old. The cultivation of the sugar cane was attempted in Italy, but without success. The Spaniards and Portuguese carried it to America about 1510. In 1546 is the first record of sale of sugar in England, and it was first taxed in 1685 by King James II, although sugar refining was introduced somewhat earlier. The vacuum pan was invented by Howard about 1850. The new sugar imported into Great Britain in 1853 was 7,284,290 cwts., in 1893, 16,032,113 cwts. Beetroot sugar was first made in 1747, and by 1800 was somewhat largely used in France, but in England only in 1884. American sorghum came into use in 1888.

The latest statistisc are again too many years back to give us what we most desire, but here are those obtainable:

	Per Capita Consumption.
United States, 1904.....	75.3 lbs.
United Kingdom, 1902-3.....	90.0 lbs.
Switzerland, 1902-3.....	63.0 lbs.
Denmark, 1902-3.....	52.0 lbs.
Russia, 1902-3.....	11.0 lbs.
Austria, 1902-3.....	18.0 lbs.
Belgium, 1902-3.....	22.0 lbs.
France, 1902-3.....	24.0 lbs.

	Per Capita Consumption.
Germany, 1902-3.....	28.0 lbs.
Holland, 1902-3.....	31.0 lbs.
Spain, 1902-3.....	11.0 lbs.
Italy, 1902-3.....	7.0 lbs.

One can not help thinking that the figures as regards the consumption of sugar in the United States are erroneously low. Surely we are using more sugar than any people in the world. The food in millions of families is, much of it, almost saturated and syrupy, while cake and sugar-laden pastry are eaten by all. The number of candy stores, bonbon counters, "soda water" fountains, etc., in all cities and villages, is amazing; and every "sweetheart" must be sweet indeed if her system does not, as it can not, burn the enormous quantities of sugar she and her lover load into her stomach. With great physical activity the normal system may take care of, and even profit by, large quantities of cane sugar, but surely not the inactive, dyspeptic, "neurasthenic" or "nervous" one. As commonly used, to excess, and without muscular activity, because of it we are certainly breeding many functional diseases, various forms and types of nutritional disorders, etc. How long these precede the final stage of glycosuria, no one knows; and as little knows how many cases of glycosuria exist in the community. Despite a few scientific attempts at investigation, we have no thoroughgoing knowledge to form a basis for law, hygiene, or medical advice. And we shall not know until the old decadent and antiquated organic pathology of functional diseases is abrogated and until the systematic periodic medical examinations of "the well," as I have suggested, are taken up by institutions and by government. If the great life insurance companies had done their duty by their members, or if they would undertake it now, in a united investigation, we might come to have a body of opinion of increasing certitude and value. In the meantime laboratory slides may vie with

"politics" in hunger for "pork," "dough," and class legislation, while disease goes on killing those thus misrepresented.

V. VENEREAL DISEASES.

One does not need to accept the probably true theory that syphilis was brought to Europe by the Columbian sailors from the West Indies, to accept the more certain truth of the growing influence of the venereal diseases in keeping high the morbidity and mortality figures of the tables of vital statistics. Nor must one accept the estimates of some gynecologists, surgeons, and writers that from fifty to eighty percent of our people are suffering from venereal diseases. Appalling as that would be, it is not necessary in order to recognize the terrible havoc they are playing with human life, and how they are enormously handicapping the evolution of better social and hygienic conditions. All that may be done here is to "look and pass on," remembering that these morbid agencies add one more to the great degenerative forces which have come into and upon those we are studying, and which are profoundly permeating and modifying what we call civilization.

The Registrar General's returns of mortality from syphilis cannot be relied on, for in but few cases of death ultimately due to this cause does the same appear on the death certificate. For instance, in Ireland, in the year 1903, out of 77,358 deaths registered, in only 104 is the cause given as syphilis, and in 14 as gonorrhea. The figures obviously bear no relation to the actual facts. With regard to the extent to which venereal diseases exist in the living population, it is just as difficult to form an estimate, and the estimates that have been made are more or less guesses depending on individual experiences. Sir William Gowers is reported to have given his opinion that there are half a million people in London alone who have contracted syphilis. There are said to be 150,000 syphilitics in Berlin and 225,000 in New York, while in France one out of every seven people is said to have the disease. Figures based on admissions to the

army can obviously not be taken as representative of the conditions of the general population, since in different countries the army is recruited from quite different classes of the population. Nevertheless, such figures are instructive, though they show a very wide variability, reaching the highest figure among British recruits and the lowest among German. Out of every 1,000 admitted to the following armies the rates for gonorrhea and syphilis were, respectively: Germany, 27 and 5.5; Russia, 36 and 13; France, 40 and 9; United States, 73 and 16.8; and Great Britain, 173 and 101. We still seem as far as ever from devising any practical means of preventing the spread of these diseases.

VI. THE MODERN HOUSE.

Of all the agents so far listed, the cheapening and general use of glass windows appears to be the most prolific and profoundly acting cause of both the goods and evils of civilization. And this has arrived at precisely the same historical period in which the effects of tobacco, coffee, tea, alcohol, sugar, venereal diseases, etc., have come upon the modern civilized human organism. Without a room warmed so as to be comfortable, and lit so one could read and write, there could not have arisen the intellectual and literary development which is the fundamental characteristic of the modern civilization of the temperate and northern nations. That warming and lighting could only be with the glass windows customary during the last 100 years. Although the Egyptians and Syrians are said to have known how to make glass long before the Christian era, it was not much used even during the first Christian centuries, except by a few rich Romans. Glass windows were found in the ruins of Pompeii, and some glass was brought to England as early as the seventh century, but the manufacture of glass was not established in England until 1557. The few windows in use by the rich were still personal property, not belonging to the house or transmitted to the heir with it. The caul of a calf, linen cloth oiled to make

it somewhat transparent, thin pieces of wood for part of the panes, some of the others being of bits of glass—these and similar devices were those resorted to. They were intermediate, in the late middle ages, between the time when the "hall" was a black windowless, cave-like space, and that of our day when the window shuts out the cold and lets in the light. How recent was this barbarism is shown by the fact that the window tax was repealed only in 1851. The duties on glass were repealed by England only in 1845. The manufacture of British sheet glass was introduced in England in 1832.

But with this general usage came the progress of architecture, artificial and chimneyless heating, which made practically air-tight houses, and the "house-diseases" which while they do not cause so much personal suffering as other classes of diseases, are still the chief executioners (if not the causes), which sign the death warrant in the mortality tables. Many other infectious diseases are permitted because of bad ventilation and filth of houses, but tuberculosis and pneumonia, which cause one-third of the deaths, are, as all acknowledge, simply house-diseases—they exist, because the modern, windowed and air-tight, ill-ventilated, and dirty house exists. City life at its best is bad for children, involving, as it does, early puberty, exciting distraction, superficiality of knowledge, insufficient repose, and the want of soothing influence that the country affords; and at its worst, when it means a tight squeeze in squalid dwellings, poor food, foul air, contact with vice and manifold temptations, it is utterly demoralizing. It seems obvious that, if the city goes on growing at the nineteenth century rate, and under nineteenth century conditions, it will dry up the reservoirs of strength in the population and leave an immense proletariat of inferior quality and without commanders.

VII. EYESTRAIN.

The reasons why eyestrain is the greatest of these evils are many, the chief being:

1. Because of its almost universal existence, the majority of people in our life being subject to it in varying degrees.

2. Because it is almost impossible for nature to make the human eyeball without little or much imperfection of shape (astigmatism, hyperopia, myopia), so its functioning becomes necessarily malfunction or pathogenic.

3. Because civilization compels near-work of the eyes (reading, writing, sewing, handicrafts, machinery, etc.), by so large a majority, for so many hours a day; for this the mechanism of the "accommodation" was not created, nor much used prior to very modern times. Continuous innervation of a muscle, or its too constant contraction, is impossible and produces disease; when, as in the case of complicating astigmatism, etc., the too long and too severe contraction becomes otherwise abnormal and unequal, then the pathogenic action becomes extreme.

4. Because as no other sense organ the eye is the *conditio sine qua non* of motility and development of all the higher organisms. The essential structure of the eye, the retina, is embryologically brain substance. The brain comes out to see. And every activity of the body depends upon precedent and governing vision. Intellect itself is fundamentally and initially visual.

Morbid vision is therefore the great cause of the exclusion of the unfit in evolutionary history, and the natural selection or survival of the fit has consisted in large part of the survival of the ocularly fit. And eyestrain therefore while not suddenly or directly killing, produces more widespread and varying morbid function of the organism, more suffering, than any other cause enumerated.

Age Incidence.

The age at which all of the foregoing provokers of disease exercise their chief and greatest power varies. If we make a demarcation line at, say 16 years, we find that the per capita

users of tobacco, coffee and tea, and alcohol, consume one-third more than the figures given, because, as a rule, under 16 those few addicted to the habits will be offset by adults who are non-users. Unless inherited and innocently acquired the children of occidental nations are rarely afflicted with venereal disease. But counterbalancing these lucky escapes, children are as addicted to the overuse of sugar as grownups. While suffering from house-diseases less severely, they are, in these schoolhouse times, as great sufferers from eyestrain.* Especially the beginnings in the total population of the awful twenty-seven percent of cases of lateral curvature of the spine (mostly due to eyes, directly or indirectly) are during the school years under 14. Eyestrain, indeed, is the only cause which is operative from the age of two to death in most, and in all of those of 45 and over.

Sex.

Sex, of course, is also a contributing factor. If we guess that those men who do not use tobacco equal the few women (smokers, snuff-takers, "rubbers," etc.) who do use it, it is evident, that the per capita amounts of the actual users as tabled, must be doubled. It is much the same with alcohol. As to the other five items the question of sex is less determinant, although women, living in houses more than men, with much sewing, reading, etc., are more subject to eyestrain reflexes than men.

Variations.

Variations in the amount of tobacco, etc., used by different persons should always be kept in mind. Many must consume enormous amounts in order to bring up the per capita average of those who do not use it at all or but little. There is at least one

*I have not included in the list the common school, which is indirectly the source of many civilized evils and diseases because it is only indirectly the source. Almost all the baneful results of the school system are due to eyestrain. The greater the number of school hours demanded, the greater the degree and the more baneful the results of eyestrain, the greater the number of suicides, etc.

man in the United States who drinks over a gallon of whiskey a day. Some women eat little else but candy or sugared food, or drink enormous quantities of tea, while many men are under the influence of strong coffee all the time. There is a striking parallelism between the per capita consumption of tobacco and that of coffee and tea; and others are evident. Such broad outlines kept in mind by the clinician, and by hygienists and legislators will help all toward a sounder judgment as to diagnosis, reforms, and the framing of uplifting laws.

Special, less powerful, and less universally acting sources of mischief may not be wholly omitted from view, as I have been compelled to ignore them. Such are the evils from injurious trades and occupations; corrupt politics; adulteration of foods and drugs; crime; cocainiomania, etc.; plutocracy; evil trades-unionism, urbanization, etc.

On the other hand are the compensations that civilization has so manifestly and beneficently brought a counterweighing—the abolition of smallpox, and of plagues, and the control of some of the other infectious diseases; the growth of the habit of personal cleanliness—not a person took a bath in all Europe, says Michelet, for a thousand years; the widening of city and town streets; the abolition of famines by means of intercommunication, better governments, etc.; the abolition of slavery; agricultural extension and reform; better clothing, food, heating of houses, etc.; printing and common schools, and not to be forgotten, the correction of ametropia by spectacle lenses.

Summary.

Thus at the beginning of the modern epoch of what we now characterize as civilization, we find that the men and women constituting its elements have had thrust upon them seven almost wholly new, universally acting, and powerful agencies of evil, all still rapidly increasing in intensity. These agencies, moreover, are in varying degrees disease-producing—some wholly so, some largely so, none not so. The point of view which

illuminates is that which fixes them as combined in action, historically of sudden incidence, of universal operation, and of startling ingravescence; luxury is the fertilizer which stimulates the alarming exuberance of their growth and gives them their great destructive power.

One limiting and modifying condition should not be omitted: The process of putting people, or of their coming under the action of "the seven deadly sins" of civilization mentioned, is still going on with millions, and is more sudden than it ever was. We in the United States know this well by experience, for the immigrants find themselves in a week transplanted from Medievalism, and subject to the action of the seven malevolent influences acting conjointly and directly.

None knows, none has more than a hint, of the definite and detailed diseases which are caused or increased by some of the seven causes mentioned. That two, three, or even all the seven, act as if in malevolent conspiracy is manifest. One alone, the unventilated insanitary house, accounts for most of the tuberculosis and pneumonia in the world; a too highly saccharinized diet is surely producing many diseases of nutrition, and especially diabetes; knowledge of the evil results of alcohol and of venereal disease is growing rapidly. Official medicine and ophthalmology still cry, *exaggeration*, as regards the awful wreckage of human lives from eyestrain, which we are only beginning to find out and which has surely not so far been exaggerated. Some medical philosopher, some genuine scientist, will come, by and by, and, by this historic method, coupled with clinical acumen, he will explain the mysterious rise and increase of many diseases, such, *e. g.*, as nephritis, insanity, epilepsy, many types of nervous and mental diseases, a number of surgical and gynecological ones, and many of denutrition, "dyspepsia," so-called "neurasthenia," etc. But after these "typical," or namable mysteries have been solved there will remain the vastly larger, usually functional, abnormalisms, which are individual and ever unique in their clinical manifesta-

tions; and these may only be explained as due to the hitherto unsuspected action of one, or the interaction of two or more, of the seven evils enumerated, all so intimately and universally bound up with modern civilized methods and habits of living.

Vital Statistics.

Increase or decrease of the death-rates of the terminal diseases? There are no statistics which are reliable, or which extend over sufficient lengths of time to be of use to us. If we are able to approach the question from this side we might have some suggestive and confirmatory inductions of value. But as to this one might say that even were it possible to have such accountings made they would be of small value, because, first, the causes now given as those of death, as we all know, are misleading and fallacious. What physician puts down *venereal disease* as the cause of death on the certificate? Or drunkenness? Or suicide? And how often the certain cause is really unknown. "He just quit breathin'," would, for all, be quite as illuminating as the tables usually are. Secondly, the ascription of the cause of death to the different customary terminal diseases is so fallacious as to amount to positive and wholesale deception. This is because the terminal diseases are not the true causes or reasons of death; they are only the last conditions preceding it, and the true causes lie back in the uninvestigated years, and the precedent functional disorders about which there is no curiosity. As well charge the sheriff with the cause of crimes and capital punishments, because he jails or kills the criminals. With us the deaths are said to be increasing caused by nephritis, apoplexy, cancer, diabetes, appendicitis, while those caused by senility, bronchitis, convulsions, paralysis, peritonitis, and scarlet fever are decreasing. As to the others it is doubtful whether there is decrease or increase. Of more certitude, and of infinitely more value is the enormously significant increase of many nervous and mental diseases such as insanity, epilepsy, headache, "neurasthenia," etc., together with lateral spinal

curvature, digestional disorders, suicide and the rest. But these things do not interest the medical philosopher and pathologist. To investigate them, Steel, or Standard Oil, governed by "leading" physicians, do not found laboratories. These diseases do not kill, not even suicide does that, sufficiently to arouse the curiosity of the pathologic pathologist.

CHAPTER V.

DISEASE AND SIN.*

Biology teaches us that from the beginning the evolution of life has been dominated by the two fundamental necessities or laws, that of nutrition and that of reproduction. Every organism that has lived has done so by the instant and constant care of the body, a fact summed up in the word nutrition, and every one that has attained maturity has also been the slave of the reproductive instinct. Hunger and love have ruled all, and they still control each of us. At a stage of human evolution when consciousness and self-consciousness arose, their first product was conscience: men began to differentiate between right and wrong. Religion and ethics were the results; states of mind and actions were good or evil, either toward God, or toward man. What was right was called good; what was wrong was called evil; or, in one sharp, awful word, sin. Whatever cosmogony, whatever branch of anthropologic science we study, we find this fateful word, sin, is ever present; attention to it is the decisive and ordering condition of social evolution. Every savage of the present or past, every child we know, every holy book, Christian or not, is but an illustration of this truth. In none is it so plain as in those Jewish and Christian summaries of experience, the Old and the New Testaments. Adam and Eve attained both consciousness and conscience through sin, that is, doing the evil thing; Cain and all the rest of us have repeated the history; we are still hungering, loving, and working to satisfy hunger and love—and we are all still sinning!

But what is sin? Religion and the religious books say it is

*The Address in Medicine before the Wisconsin State Medical Society at its annual meeting, held June 26, 27, 28, at Waukesha, Wisconsin. *American Medicine*, August 31, and September 7, 1901.

disobedience to the command of God, and that is true enough, because God will only order that which is right. But science has shown us that we understand a product of evolution only when we search out its origin and history. If we do this as regards sin, we learn that in all essentials the "commands of God," are the lessons which wise and good men draw from their observations of life. The evolution or incarnation process, every human life, indeed, is an experiment in living. Self-consciousness, conscience, wisdom, ethics are the epitomes of these lessons of experience. Whether God-given or man-learned, they represent what we have gleaned from the experience of others and of ourselves. Sin is the thing we and others have found should not be done. To be sure we have, each of us, to relearn the lesson *de novo*. Like the scapegrace son, we answer the transmitted advice of the past with an eager protest that we will not profit by the experience of our fathers, and that we must have the experience ourselves. We succeed admirably in this, and also in sin's inevitable consequence, suffering. The recognition of sin seems, therefore, to be but the gathered lesson of experience; it is drawn from the observation of the simple fact that sin brings suffering, whether the command of God, or the demand of social evolution, whether religious or ethical, matters not, and indeed, is only the obverse and reverse of one fact.

There is a tendency, and indeed a downright dogmatism on the part of materialistic medical scientists to reduce all mentality and especially immorality to purely physical origins. "Stigmata of degeneration" and "neuroses" are the terms applied to every abnormal characteristic with glib self-satisfaction and with the evident purpose of implying the nonexistence of anything psychic as preceding and causative of physical ills. All functional disease is organic if we could discover the pathology. This is, of course, as unscientific as it is silly. There are plainly two differing and different elements in man, the psychic and the physic, and abnormalism in either may be

independent and primal, and it may be causative of abnormalism of evil in the domain of the other. To demand or attempt proof of this duality and interaction of man's nature is as useless for those who ask it cynically as for those who observe it daily. It is self-evident for those who are not wilfully blind, and the wilfully blind furnish the most perfect demonstration in themselves of the domination of mind over matter.

My special thesis is that this experience-derived law of sin has arisen very largely out of hygienic and physiologic experience, and that its present validity is, in a broad meaning of the word, medical. The punishment of sin has always been primarily and largely a punishment of the flesh, the suffering has been essentially physical, and secondarily psychical. The very pathos and tragedy of the ideal of religion and ethics has been in the endeavor to arouse in the mind of the sinner his accountability for the sufferings of others. The strain of beneficent science is still to convince him that his sin not only curses himself, not only the third and fourth generations, but all the present world and all the coming generations. Religion and medical science both recognize the truth that to prevent sin and disease is the fundamental duty, and that to do this the vicarious atonement of the reformer and of the disease-preventer is necessary. All scientists who have renounced selfish aims to discover the laws of life and disease, all good physicians who have labored to prevent future physiologic evil, belong to the same noble band of vicarious sufferers and atoners in which are the religious and ethical teachers of the world. The difference is that we better than they see the mechanism which begat the conception of sin, and better than they the method whereby the results of sin are worked out into disease and suffering. May we say, also, that more effectively we are struggling to stop both the sin and the suffering? Preaching and prophesying and warning for thousands of years did not effect what medical and sanitary science has done in 200 years—*i. e.*, doubled the length of human life.

Note, historically, that in the record we best know, the condensed experience of the ages before writing began is conveyed in the astonishingly accurate allegory of the physiologic sin and the sexual consciousness of Adam and Eve, followed by bread-winning labor. Knowledge of good and evil could not be prevented even by God, and the age of innocence ended. Then began the work, the sin, the disease, and the suffering of all after-ages, until to the childlike antediluvian mind the only way out of the ingravescient horror appeared to be the deluge. Alas, even that gave no relief; and no relief has ever come until Preventive Medicine came, and we are now in the thick of the fight against sin and disease, but with the victory partly won.

The relationship of sin and disease has been recognized by all great philosophic minds, but nowhere has it been so accurately expressed as in the trenchant words of Cotton Mather,* who speaks of disease as *Flagellum Dei pro peccatis mundi*. To those modern materialists, or atheists, and especially to the all-knowing agnostics, who misuse science for dogmatic purposes, this saying of Cotton Mather will seem beneath their scorn, because to their thinking there is neither sin nor God. They should go one setp further and, with their allies, the unchristian unscientists, make an end on't by also denying the existence of disease and the world. It is an old trick of the mind to rid itself of difficulties and responsibilities by denying the existence of facts. He who silences his conscience by denying sin, only adds another sin to his individual burden, and another sinner to the burden of the world. And he who sees no purposive intelligence behind biologic evolution is too poor an observer, too muddle-headed a scientist to parley with. He is proud of his own intellect, and he affects belief in the law of cause and effect, but how could his reason have been derived from an irrational source? Himself is a far better proof of his theory than is his logic!

Let us therefore assume as beyond discussion that atheism

* See the Memorial History of Boston, Holmes, Vol. IV, p. 557.

is unscientific, and that God lives, and that sin is opposing and not furthering his biologic work in the world. What follows? Crippling or extinction of the sinner by disease and death, the "scourges of God." But the flagellum-blows fall not only upon the sinners, but upon all those, innocent or not, who, bound up with them by fate, may repeat the offence, or who, less thoroughly than others, may help to carry on the mechanism of the evolution process by means of heredity, etc.

"Ihr führt ins Leben uns hinein
Ihr lässt den Armen Schuldig werden
Dann überlässt ihr ihn der Pein
Denn alle Schuld rächt sich auf Erden."

Hard as the law may be, it is nevertheless true. Not all the sick have been sinners—far from it—but all our pity for the innocent who suffer for the sins of the guilty must not blind to us to the fact that where there is disease, suffering and untimely death, there the lines of causation, generally and most often completely, lead back to what in a large way we call sin. Nor must our pity lead us to charge the biologic law with injustice, because only thereby comes prevention and multiplication of the evil. Better the wretchedness of a few innocent than of many; better the temporary than the permanent and increasing reproduction of the evil. God is a true physician, working for final normality. He may cauterize in order to cure, and prefer amputation rather than necrosis. His patient is the entire future body and soul of humanity, not the individual members here and now existing.

The wise ones of the world, the philosophers, and the prophets, the leaders of men to better living, have been those who saw the far and subtle lines and laws of causation running back from disease and untimely death to the sources of ignorance (which is also sin), of selfishness and of wrongdoing. This is the text of all preaching and prophecy, the burthen of all tragedy, the plot of all literature.

And it is the heart of medicine! Let us consider a few illustrative examples.

The force of the reproductive instinct is not second, but is stronger than the law of self-preservation. Under given conditions the tree will commit suicide to ripen its seeds; the phosphates may be taken from the mother's bones to supply those of the fetus, and the mother herself will choose the sacrifice of herself to save the life of her child. The perpetuation of the race is a primary concern of the divinity of biology. The care of the child demands the parent's attention and life-work. This compels monogamy. Unchastity was thus the earliest of recognized sins, but until civilization multiplied the sin so enormously, syphilis and gonorrhea were not needed to teach the lesson with a fury adequate to the evil, and with a thoroughness which all physicians know.

"Since 1494," says Dr. Duncan Bulkley,* "syphilis has spread, until now, according to the best writers, there is hardly a portion of the inhabited globe where it does not exist with more or less virulence." It is stated that in Russia at least one-fourth of the inhabitants in some villages are infected, and all writers agree that it is mostly spread there in an innocent (*i. e.*, asexual) manner, mainly in family life, for prostitution is almost unknown in the villages. In Great Britain and Ireland it prevails widely in the great cities and ports. Dr. Holland, in 1854, estimated that at least one and a half million persons were infected annually in the United Kingdom. Japan and China are so full of it that Dr. Eldridge states that it is quite exceptional to meet a male Japanese who will not acknowledge that at some time he has had syphilis, and in the French Hospital at Tien-Tsin about 30 per cent of all cases were of this disease. Dr. Sturgis believes there are fully 50,000 new infections in New York City annually, and the statistics compiled by the American Dermatologic Association indicate fully 11.5 per cent of all skin diseases as undoubtedly syphilitic.

**Journal American Medical Association*, April 6, 1901.

Dr. S. D. Gross* said: "It would be a matter of deep interest and, in a practical way, of the greatest possible value, if we could ascertain even approximately the extent of syphilis in our cities and larger towns; but, for such a decision there are, unfortunately, too few data. Certain it is that it is of gigantic proportions; that it exists in many of the best and noblest families of the land; that since the establishment of railroad travel it has penetrated every rural district, and that it is poisoning, and slowly but surely undermining, the very foundations and fountains of life in every direction, sowing the seeds of death among our people and gradually deteriorating the national health." Again, "When a pestilence, *e. g.*, smallpox or cholera, breaks out in a community and threatens to decimate its population, every man's fears are at once aroused and steps taken to counteract its progress; * * * but here is a disease a thousand times worse than the deadliest epidemic, doing its work slowly and, as it were, in disguise and darkness, ruining entire families, destroying many of our best men and women, and laying the foundation of untold misery, wretchedness and woe, not infrequently extending through several generations."

At the date of his paper (1874) Dr. Gross estimated that more than 1 out of every 20 of our population was infected with syphilis.

Dr. S. T. Armstrong† says there were 1,742 males over 5 years of age that died from syphilis in England from 1880 to 1890. Military statistics have shown that about $\frac{1}{10}$ of 1 per cent of those affected with syphilis die therefrom; so that during the decade mentioned there were probably 1,742,000 males affected by syphilis, or about 175,000 annually.‡

In his *Dictionary of Statistics*, Mulhall estimates the number

*Syphilis in its Relation to the Public Health, read before the American Medical Association, June 3, 1874.

†Morrow's System Genitourinary Diseases, Syphilology and Dermatology, Vol. II, 1893.

‡Taken from the report of the Registrar-General of England for the decade 1881-1890.

of soldiers in European hospitals sick with syphilis as ranging between 7 percent and 43 percent, and averaging 19 percent. In the different countries the numbers vary from 54 to 333 per 1,000, with an average of 140, or 14 percent.

Sir Charles Cameron writes:*

"Our soldiers in India suffer terribly from venereal disease. For some years past one man out of every two has been admitted to the hospital with some venereal trouble, syphilis and gonorrhea being about evenly divided. At Madras the admissions from these diseases were in the ratio of 739 per 1,000 men. It is terrible to speculate upon the amount of syphilitic poison our young and mostly unmarried soldiers import into the United Kingdom from India, and how much of this virus will circulate in the blood of unborn generations."

A competent observer† specially commissioned for the purpose of investigating the subject, writes:

"During the time of the American occupation about 60,000 sick soldiers have been treated in all the army hospitals in the Philippines. Of these, about 10,000 were cases of venereal diseases. When these thousands of diseased and demoralized soldiers return to America to draw life pensions and marry innocent girls, the vengeance of violated law (sin) will fall heavily upon the American people.

"There were but 3 saloons in Manila when the American troops took possession of the city.‡ There are today 1,109 places in the city of Manila where intoxicating liquor is sold openly and publicly, not counting the hundreds of 'blind pigs.' With the advent of the American troops there came abandoned women from every corner of the earth." H. M. Neuans,§ who organized the Purity Society of India, and who has made an intelligent study of the conditions, says that "during the first year of the American occupation 800 prostitutes came to Manila."

It is only too plain, varying Krafft-Ebing's epigram, that the inevitable concomitant of civilization is syphilization.

But gonorrhea is at present being recognized as an equal

*Report on Public Health, *Dublin Journal Medical Science*, Vol. CV.

†William E. Johnson, in *The Daily Voice*, Chicago, October 27, 1900.

‡*Ibid*, August 25, 1900.

§ *Daily Voice*, October 27, 1900.

or greater evil by all competent observers. Hyde and Montgomery in their work on venereal diseases say that gonorrhea and its complications have a greater mortality than syphilis, and Moyer* writes:

"Since the gonococcus has been isolated and cultivated it has been found that general infections are frequently caused by this organism. Pleurisy, meningitis, myocarditis and peritonitis, and of late a gonococemia have all been identified. So that gonorrhea is not a purely local disorder."

Please note that in the tables of mortality, of which I shall later quote several, there is not a word as to syphilis, gonorrhea, or alcoholism. The fact illustrates the crudity, even stupidity, of some of our statistics. These highly fatal diseases escape blame for death and suffering because men do not study the real and secondary causes, only the immediate and direct ones. Eyestrain is another example of a similar kind.

In reply to the question asked by letter of the most prominent American and foreign gynecologists as to the percentage of pelvic inflammations traceable to gonococcal infection it was shown† that the reports of 24 prominent workers indicated no less than 41 percent of such disorders as distinctly secondary to supposedly cured male gonorrhea.‡

**Journal American Medical Association*, March 30, 1901.

†Report of the Committee on State Medicine of the American Medical Association appointed to inquire whether and when the gonorrheic may be permitted to marry.

‡The following are the exact figures:

Hermiston	90%	Frederick	75%
Jos. Price (1,000 sections)	90	Laphorn Smith	60
Boldt	8	Stone	60
Skene	10	Baldwin	60
Robb	10	Watkins	50
Eastmann	10	Lawrence	50
Bovée	10	Ross	50
Dunn's private work	10	Noble	50
Jacobs, 5,000 private cases	12	Lanphear	25
Jacobs, 7,000 hospital cases	18	Kreutzmann	33
Dunn (hospital work)	45	Baldy	33
Pozzi	75	Grandier	20

As to the extent to which sterility is due to gonococcal infection the estimated percentage by the same workers is 42 percent.*

Hirst and Robb, too, regard sterility as the rule where infection has occurred; Humiston and Kreutzmann say that sterility results in every case where the ovaries or tubes are attacked, and "Czerny believes that fully 50 percent of all sterility is due to the husband's gonorrhea."

And what a disease is prostitution itself!†

The most important of the conclusions reached by Dr. Sanger in his study of prostitution in New York City are:‡

1. There are 6,000 public prostitutes in New York City (this was in 1860). In 1897 there were 30,000, according to Dr. Sturgis,§ and the number has recently been roughly estimated at between 40,000 and 50,000.

2. The majority of these are from 15 to 25 years old.

3. Three-eighths of them are born in the United States.

4. Education is at a very low standard among them.

5. One-fifth are married.

6. One-half of them have given birth to children, and more than half the children so born are illegitimate.

*Dunn.....	3%	Ross	40%
Lapthorn Smith	12	Stone	50
Jacobs	21	Lanphear	50
Skene	33	Price	50
Grandier	33	Frederick	50
Boldt	33	Mann	50
Eastmann	75	Noble	66
Bovée	40	Baldwin	75

†"There has arisen in society a figure which is certainly the most mournful and in some respects the most awful upon which the eye of the moralist can dwell—that unhappy being whose very name is a shame to speak, who counterfeits with a cold heart the transports of affection and submits herself as the passive instrument of lust; who is scorned and insulted as the vilest of her sex, and doomed for the most part to disease and abject wretchedness, and an early death—appears in every age as the perpetual symbol of degradation and the sinfulness of man. She remains, while creeds and civilizations rise and fall, the eternal priestess of humanity, blasted for the sins of the people."—Lecky's History of European Morals.

‡History of Prostitution, N. Y., 1897.

§See appendix to Dr. Sanger's work.

7. The ratio of mortality among the children of prostitutes is 4 times greater than the ordinary ratio among New York children.

8. The average duration of a prostitute's life of abandonment is 4 years.

9. Nearly half of these women in New York City admit that they are, or have been, sufferers from syphilis.

10. Six-sevenths of them drink intoxicating liquors to a greater or less extent.

11. A capital of nearly \$4,000,000 is invested in the business of prostitution, and the annual expenditure in this traffic is more than \$7,000,000. (If these were the figures for 6,000 prostitutes, they can not now be much less than \$25,000,000 and \$50,000,000, respectively.)*

It is plain that all this horror of syphilis, gonorrhea and prostitution would cease with the cessation of unchastity. It by no means follows that we should aim at prohibition measures. We can not produce absolute morality by law. The prohibitionist, sincere indeed though he or she may be, is the enemy of real reform and true progress. We must attack the origins of the evil, and secure a little prevention here, a throttling there, and a general education everywhere. If, as a little example, we encourage the vicious drama, and the debauching "shows" supplied by many traveling troupes, we encourage the hideous license exhibited by the thousands thus supported by us. If

*Mulhall (*Dictionary of Statistics*, 1898) thus estimates the number of prostitutes in various cities:

London.....	31,800
Paris	26,900
Berlin	27,300
Lyons	5,520
Marseilles	4,080
Bordeaux	2,610

According to the *Dict. des Scien. Méd* (quoted by Mulhall) 100 prostitutes may be expected to give birth in their lives to 60 infants, while 100 married women may be expected to give birth to 480. This is of great significance as bearing on the population.

we do nothing for tenement house reform* we allow the drift into all the sin and disease encouraged by overcrowding.

Undoubtedly the spread of these diseases may be prevented by proper legal measures of license, registration, and sanitary inspection. We must exert a continuous and clear-headed effort to these ends despite the frantic screams of misguided sentimentalists, who act without intellect and without study of facts.†

*"The spread of prostitution among the tenement houses has grown rapidly in recent years. (Report New York Tenement House Commission, 1900.) Evidence has been submitted to the Commission to show that the protests of the dwellers in tenement houses immediately affected have been unheeded; and in spite of the best efforts of careful parents, the very house which they have selected because of its supposed freedom from this curse has often furnished the very temptation against which they have guarded their children in vain.

"The familiarity with vice, often in its most flagrant forms, possessed by young children, because of the condition just described, has profoundly impressed the Commission. Boys and young men become adept in immorality because of the constant temptation almost at their own bedroom doors. 'From the statements of many in a position to know the facts, we are led to believe that more young girls have been started in recent years upon a life of immorality because of tenement house associations than by all other means combined that minister to this traffic.'

"While there is no other American city with such tenement house problems as New York City, each large municipality has its own housing problem."

†In re the regulation of prostitution by legislative enactment (embracing registration, licensing and sanitary inspection) Sanger, (*History of Prostitution*, 1897) says:

"A law (drafted upon the lines of that in operation in Paris) was enacted by the Missouri Legislature, the object of which was to bring and keep under control prostitution in St. Louis. This law remained upon the statute books only about a year—truly a very short period and yet sufficiently long to test, in a measure, the results of its operation.

"Its repeal' (to quote a St. Louis journalist, *The Missouri Social Evil Law*, *Morning Advertiser*, January 12, 1895) 'was the result, not of any failure of the measure to accomplish the wholesome end for which it was enacted, but was in obedience to a morbid sentiment begotten of absolute ignorance of the subject.'

"The city of St. Louis was divided into 3 districts in charge of each of which was a physician of recognized standing who made inspections weekly. The fees accruing from this work found their way, largely, directly back to the maintenance of a hospital for these women, where, under good environment, some of them were reclaimed for society." The above writer further says, "The law had been in operation but a short time when its salutary effects were clearly evident. Primarily, the evil itself was lessened; but of more consequence and value to the city was the marked decrease of physical

If we study the subject of alcoholism we find the same lessons appearing. According to Mulhall the world's expenditure for alcoholic drinks as long ago as 1896 was \$2,445,000,000, and the average annual number of gallons of liquors consumed in Europe, United States, Canada and Australia was 7,496,000,000, or an equivalent of 778,000,000 of pure alcohol. There were in 1895, in the world 42,988 breweries and distilleries. *The Statistician and Economist* (1899-1900) estimates that in the United States in the last 10 years, there have been consumed 14,950,766,330 gallons.

The United States annual drink bill for 1900 is estimated (from the Annual Statistic Abstract of the United States) by the *American Grocer* (April 13, 1901) at \$1,059,563,787.00, and by the *New Voice* (April 13, 1901) at \$1,172,493,445.00.*

ailments invariably attendant upon this vice." The *Missouri Medical Record*, May 15, 1874, said editorially a few weeks after the repeal of this law, "Not only had the system operated most beneficially in the interests of the community, but so fully aware of the physical advantages of the law had the women themselves become that not a few continued to voluntarily subject themselves to inspection at their own expense, even after the abrogation of the law. The incidents attending the repeal of the law were dramatic in the extreme and show plainly to what ends misguided otherwise good people will go. Throughout the State there was an uprising against what was regarded as the licensing of vice, and the lobbies of both legislative houses were taken complete possession of by the clergy of the various denominations. A petition praying for repeal, signed by more than 100,000 'good' people was presented. The document was cumbersome. A wheelbarrow decorated with white ribbons and accompanied by a group of innocent young girls attired in white was brought into service, and on it the gigantic emphatic protest against the licensing of vice was wheeled up to the clerk's desk to be read. There was not a vote from any city member for the repeal of the law, and not one vote from any country member against it. Courageous indeed would have been the country member who would have voted for it." Of course, there were counter-petitions from the cities. The law received the almost unqualified endorsement of the medical men, as it received almost as unanimously the condemnation of the clergy.

Instead of the legal regulation of prostitution Mayer advocates universal circumcision, estimating that it will lessen the frequency of venereal diseases from 50 to 75 per cent. Dr. Prince A. Morrow says (*Sanger's History of Prostitution*, I. c.), "The regulation of prostitution and the control of syphilis are but convertible terms."

*The latter paper submits the following interesting figures:

Total exports merchandise to June 30, 1900.....	\$1,394,483,082
Total railway receipts to June 30, 1900.....	1,336,096,379

The total capital invested in the liquor traffic in 1896 was \$957,000,000. Of proprietors of establishments there were 191,500, and of employees 241,555. The total number of people engaged in the traffic, 364,000. If we assume that each of these breadwinners maintains an average family of 4 beside himself, we have a sum total of over 1,800,000 persons deriving their support directly from the liquor traffic. The question is whether all this wealth and activity constitute a real addition to the economic power of the country. Whether alcohol is a food or a poison is also not an absolutely settled question. However, whatever its effects in small doses may be, it is generally agreed that in excess it diminishes the capacity for labor and leads to poverty and crime.

Looking simply at the burden entailed upon the public, it naturally divides itself into two general classes:

1. That burden occasioned by poverty.
2. That burden occasioned by crime.*

Mulhall finds that during the civil war the deaths from drink were 35 per 100,000 men; 150 out of every 100,000 men were sent to the hospital for sickness due to alcoholism. In the British army the deaths from drink are 181 per 100,000 men, and 3,620 out of every 100,000 men are sent to the hospital for diseases directly or indirectly due to alcohol.

In the United Kingdom, while the average mortality rate has fallen from 22.5 per cent to 17.2 per cent per 1,000 since 1872, the rate of death from alcoholism has increased from 45 per 1,000,000 in 1875, to 77 per 1,000,000 in 1897.

Expenditures for liquor..... \$1,172,493,445

Public debt 1,107,711,258

World's production gold (1899) 306,584,900

World's production silver (1899) 216,209,100

The farm produce consumed in the production of various kinds of liquors in 1896 was about 58,000,000 bushels in grain alone. This included about 10% of the total consumption of corn, 11.2% of the total rye consumed.—(*Twelfth Annual Report, Federal Department of Labor.*)

*Economic Aspects of the Liquor Problem, 1899, Houghton, Mifflin & Co. By the Committee of Fifty.

Mulhall finds the yearly average per 1,000,000 of deaths from alcoholism to be:

England	63	Prussia.....	23
Scotland	54	Belgium	53
Ireland	30	Sweden	21

The total alcoholic deaths per year are, for—

England.....	1,405	Switzerland.....	244
Scotland.....	230	Sweden.....	502
Ireland.....	280	Norway.....	72
France	448		
Belgium	456	Total.....	4,346
Italy.....	709		

Alcohol is, as we all know, the chief cause of crime. In 1897 Mulhall states that the total convictions in the civilized world were 3,110,482.* According to the report of the Royal Commission of Scotland, 72 percent of all crime proceeded directly or indirectly from drink.

"France," say M. Bertillon and M. Fouquier,† "is literally being killed by alcohol." They trace to this cause the declining population. Forel‡ shows that in men and women alcoholism

*Convictions in 1897:

United Kingdom	11,745	Switzerland.....	3,580
France	221,770	Finland	17,450
Germany	454,200	United States	82,330
Austria	562,900	Australia	111,870
Hungary	89,340	Canada	37,280
Italy	360,290	India	845,000
Norway	31,770	Cape Colony	51,210
Denmark	3,897	Algeria	60,660
Holland	104,390	Jamaica	15,890
Belgium	44,910		
Total			3,110,482

†*Wiener med. Wochenschrift*, Nos. 16 and 17, 1901.

‡Commenting on the statistics of the French census for 1899, M. Bertillon declares (*Economiste Français*, quoted in *Literary Digest*, February 23, 1901) that they show France to be in the position of a man dying under the influence of chloroform. "It is painless, but it is death, nevertheless." The figures show a stationary population, and if the present tendency continues unchecked, an actual decrease is feared. Another writer (Henri

(present in most cases) tremendously increases the infection of gonorrhea and syphilis, because it increases sexual desire, blunts the moral sense, and lowers the physiologic power of resistance to the virus.

Of the poverty which comes under the view of charity organizations, 25 percent can be traced to liquor. Of the poverty found in almshouses, 37 percent is traceable to liquor. In the case of destitute children, not less than 45 percent was found to be due to liquor either on the part of parents or guardians. These figures are based upon investigations* and reports from 33 charity organizations, 11 children's aid societies, 60 almshouses and 17 prisons and reformatories.

The investigation† further included 13,402 convicts (17 prisons), and intemperance figured as one of the causes in 50 percent, as a first cause in 31 percent, and as the sole cause in 16 percent of all cases.

For foreign countries the figures are: Russia, 25 percent, Austria 34.6 percent, Germany 44.8 percent, Italy 50 percent, England 52.9 percent, Scandinavia 56.2 percent, Ireland 56.7 percent, Canada 56.7 percent, Scotland 58.3 percent.

In speaking of the increase in the number of cases admitted during 1900 to the Royal Edinburgh Asylum,‡ Dr. Clouston, the superintendent, says the conclusion is unavoidable that the unusual increase in admissions was due to a large extent to alcoholic immoderation during times of prosperity, attended with

Fouquier, in *Paris Matin*, quoted in *Literary Digest*, February 23, 1901) declares that alcoholism is the national enemy, the real cause of French decline in population, physical vigor and enterprise. "It is alcohol in all its forms which makes the veritable maniacs who live among us so numerous that they have ceased to attract attention, except when their crimes take an unusual shape. Among the lower classes there is at least 1 alcoholic for every 10 persons. Whether it be hereditary or acquired, a weakened nervous system has become so general in our race that the evil of alcoholism may produce its ravages without the victims even suspecting its influence upon them."

*Committee of Fifty. Economic aspects Liquor Problem, l. c.

†L. c.

‡*Journal American Medical Association*, April 13, 1901.

brisk trade and high wages. The number of alcoholic insane admitted to the asylum has increased from 15½ percent in the period from 1874 to 1888 to 21½ percent in the period 1889 to 1898. Of 472 cases received in 1900, drink was either the sole or the main contributing cause in 115, or about 25 percent of all. Dr. Clouston notes the more significant fact that for every individual man in whom excessive drinking causes absolute insanity, there are 20 in whom it injures the brain, blunts the moral sense, and lessens the capacity for work in varying degree. He rightly contends that "it is an irrational application of the doctrine of liberty to grant to every man the inalienable right to render himself a burden to others and a source of degradation and danger to the community."

As with venereal diseases, so with alcoholism, in our new national expansion, we have a frightful responsibility. There can be little doubt that we are teaching the previously temperate Filipinos vices which do disgrace their semi-civilization.

How may we as physicians prevent the evils, physical and mental, of alcoholism? Again, as in syphilis, gonorrhea, etc., I think the answer must be, not by radical measures, not by enacting laws in which 75 per cent of the people do not believe, and will not obey—that is to say, not by prohibition. Prohibition breeds intemperance. In the States where this has been tried, it has not lessened the evil; it has been a hypocritical failure, and other evils have been created. Exclusive of the prescriptions of physicians and the sales by legitimate drug stores, the inhabitants of one small New England prohibition State last year demanded over 3,000,000 doses of opium.

By the punishment of drunkenness; by improvements in tenement-houses, and in the lives of the people living in them; by satisfying the thirst for fellowship which perpetuates the saloon; by the recently inaugurated English reform of the liquor saloons, or "temperance trusts," by philanthropic capitalists,*

*See the excellent book, *Substitute for the Saloon*, Raymond Calkins, compiled and published by the (N. Y.) Committee of Fifty.

and, lastly, by a steady education of our patients and the public toward self-control and temperance, we may in the future lessen the evils of alcoholism, which at present are so painfully evident.

Suicide is another cause of increased mortality largely due to sin. In Europe the mean annual rate of suicides per million of population in the 10 years ending 1880 was 124; in 1888 the rate was 144. Not only is suicide increasing faster than the population, but the increase is greatest in the countries of greatest educational pressure.*

The total number of criminals at large in the United States has been estimated† at 500,000, of which at least one-half are habitual criminals, making their living by crime. The number of prisoners in 1890‡ was 82,329. The juvenile delinquents numbered 14,846. The criminal classes cost the country over \$600,000,000 a year. The number of homicides in the United States is about 10,000 a year.

Among the causes of death and sickness, and of the expense of these, war and militarism must not be forgotten. The Boer war cost the English people over \$500,000 daily. President Eliot, of Harvard College, says that the amount doled out to our Agricultural Department is about equal to the cost of the war with Spain for 1 day, while that given the Geologic Survey is less than the cost of 6 hours of that war. We might add that the help offered preventive medicine each year would perhaps equal the war-cost of a few seconds! In Austria, says J. S. Bloch,§ 4½ times as much money was spent on militarism

*Reginald A. Skelton (*The Nineteenth Century*, September, 1900): "We are in the presence of a growing sense of malaise. It is a disheartening thing to have to acknowledge that, after the wonderful progress of mankind during the last 50 or 60 years, the individual probably finds life less enjoyable and more difficult than before. But civilization has multiplied our wants and desires more rapidly than it has supplied the means of satisfying them."

†Eugene Smith, Congress National Prison Association, Cleveland, 1900.

‡U. S. Census Report, 92 percent males, 8 percent females, 68 percent white, 32 percent colored.

§The Future of War, 1899.

as on popular education; in Italy 8 times; in France 5 times, and in Russia 12 times as much.

The United States pays each year for its army and navy \$253,696,870, and for pensions over \$160,000,000, making our total annual military budget about \$400,000,000. The total annual cost of the armies of the civilized world is something like \$1,200,000,000. Bloch estimates the cost of the world's wars during the last 50 years (excluding the Boer and the Spanish-American wars) at \$6,106,800,000, and Mulhall says the wars of 90 years have cost over \$15,000,000,000 and 4,470,000 lives. In our Civil War there were enrolled 2,252,000 men in the Northern army, the average strength being 431,000; the average number of men constantly in hospital was 37,000, or 9 percent. The pernicious influence of militarism upon its own people is illustrated in France by the Dreyfus trial, and everywhere by the increase of debauchery and venereal disease, but it is particularly manifest in the sociology of tropical conquest. The horribleness of the recent crimes of the "civilized" soldiers in China is not known. "It is doubtful," says M. Leclère,* "whether the victor does not suffer more than the victim." It is his judgment that under modern conditions conquest means decadence of the conquering race, and demoralization and ruin of the conquered. Commenting upon this the *New York Evening Post* (November 6, 1900) says:

"This is a cold douche for science to pour upon our hot and heady imperialism, but the truth must be told. M. Leclère masterfully points out the subtle interchange—a sort of moral osmosis—which goes on between the higher conquering race and the conquered. It is, in general, a give-and-take of what is bad in each. It is one of the terrible forms of revenge which the conquered take. They perish, but in their death they poison the life of their conquerors. The history of tropical colonization is one long *vae victoribus*."

So far we have been considering only those sins and diseases the entire evil products of which would be abrogated if men

*Congress of Ethnographic Science, Paris, 1901.

did not break those laws of which all know, and which all acknowledge to be good. Almost one hundred percentum of the effects of unchastity, syphilis, gonorrhea, alcoholism, suicide, homicide, and war, are evil. I know there are some that will demur as to militarism, but either they are the devil's advocates, paid for service, or they have not studied the matter with sufficient thoroughness.

If I do not weary you, I wish now to notice more briefly the class of evils and diseases which are only partially due to moral obliquity.

In 1900 there were, in England, 4,308 accidental deaths, and 89,042 wounded among industrial workers. In the United States the only similar statistics we have are of those killed and wounded by railways. In 1900 the numbers were 7,123 and 44,620, respectively. If these men had been sacrificed in a battle, or by an earthquake, how we would have been shocked; and yet, few of us noted the news item. How many of the cases were unnecessary? How many were due to greed and obviably wrong?

Mulhall estimates the number of paupers in 1888 in 9 European countries at 2,273,000, and the cost of their maintenance at about \$100,000,000. In 1898 the cost to Great Britain was \$65,099,740. Our own paupers numbered in 1890, 73,045. What portion of pauperism is due to immoral conduct and character, it would be hard to say, but in this country I should be inclined to put it close to 100 percent.

We also had with us in 1890, 106,485 insane, 95,609 feeble-minded, and 50,568 blind. In England in 1899* there were 105,086 lunatics, or one in every 302 inhabitants. Whate estimates that intemperance accounts for over 30 percent, and heredity for 46 percent, so that 76 percent of the total number exist because known preventive measures were not in force. Dr. H. W. Coe† says that not less than 50 percent of the

*Whate's Politician's Handbook, 1900.

†*Medical News*, March 9, 1901.

insane should never have been born, "and for this mistake physicians are, to a certain extent, responsible." The meaning is not that the delivery should have been prevented, but that the conception should never have been possible because of the interdiction of the marriage of the unfit.

I have several times spoken of our national responsibility. One more instance would be that of our blind partizanship, and our morbid indifference to our duties as citizens, whereby we turn over to corrupt politicians the greatest social mechanism for good or evil, our executive and legislative control of cities and, indeed, of the whole country. In *Harper's Weekly* of October 4, 1900, Mr. Franklin Matthews gives one instance out of many that might be brought, and shows us "The Cost in Flesh and Blood" of one corrupt political organization.

Of the increasing death-rate, Mr. Matthews says: "Since the beginning of Mayor Strong's administration the New York City death-rate has been going down—swiftly in the days of the Strong regime; very slowly since the resumption of Tammany rule. Good pavements and fair street cleaning have done it." But the above statement applies to the whole city. "How about the Seventh, Tenth, and Seventeenth wards, where the great tenement house population lives? The last figures from the present Board of Health, now under Tammany control show an increase in the death-rate of the Seventh ward of 2.21 percent; in the Tenth ward of 2.35 percent; and in the Seventeenth of 1.39 percent." Nothing points stronger the cost in flesh and blood of sinful abuse of public power than the significant showing that the burials in Potter's field have doubled in the 2 years of restored Tammany mis-rule. Lastly, the total number of arrests of women for disorderly conduct for 4 years was, 1896, 13,075; 1897, 12,415; 1898, 14,512; 1899, 17,255. But all these figures are only side issues compared with the statements about the depravity and corruption of the children of the slums and the wholesale importation of white and colored women to the city for immoral purposes, and all in order that

the Tammany chests may profit by the blackmail levied upon all sorts of vice. These are hard things to read, and still harder to write about, but every man should insist upon his neighbor's knowing under what conditions his children must grow up to womanhood and manhood.

As a good mugwump I must protest that we take no unction to our Republican souls. We are as badly off in Philadelphia, and in many other stalwart strongholds, "sound in the faith, but dead in sin." From recent events in Pennsylvania, I should say we are not only dead in sin but putrid.

Of the 70,000,000 people now living in the United States, over 10,000,000 will die of tuberculosis.* It is said that 1,200,000 of our people have the disease at any one time. One-third of the deaths occurring between the ages of 15 and 60 are said to be due to it.†

There are annually in New York City about 9,000 deaths due to pulmonary tuberculosis, and about 4 times this number suffering from the disease, $\frac{1}{4}$ of whom are living in the tenement house districts. The actual economic value of these deaths and of the sickness is over \$8,000,000 per annum.‡

*The mortality due to tubercular disease still remains appallingly great. During 1896-7, 7.6 per cent of the total English mortality was caused by tuberculosis, and 11.6 per cent (that is to say 1 out of every 9 persons) by all tubercular diseases together. Further figures show that between the ages of 15 and 55—the most important working years of life—26.6 per cent of the total deaths among males were caused by tuberculosis, and 28.9 per cent by all tubercular diseases.—Newsholme (Vital Statistics, 1899).

†Tostivint and Remlinger (*Rev. d'Hyg.*, Paris, xxii, No. 9), have figured out the following statistics of tuberculosis mortality among different races:

Mussulman Arabs.....	11.3 per 1,000
Europeans.....	5.13 per 1,000
Jews.....	0.75 per 1,000

Race immunity may be excluded as between Arabs and Jews, as they are both Semitic. Their household methods, however, are quite different. While among the Arabs and Europeans the houses are invariably *dry* swept, in Jewish homes, rich or poor, the floors, walls, staircases, etc., are moistened before being swept, or else cleaned with a wet cloth. To this latter fact the authors attribute the comparative rarity of tubercle among the Jews.

‡It is not easy to place a money value upon human life, but according to one of the best authorities on this subject, the economic value of the individual is what he has cost his family, the community or the State for his

Pneumonia is now killing more of our citizens than pulmonary tuberculosis, so that we may say that nearly one-half of our mortality is due to diseases of the lungs. The rage for wealth, luxury, and city life, occupation-diseases,* and the breathing of dust, the deadly tenement house, the insufficient exercise of the lungs and oxygenation of the blood, all combine to warrant us in largely charging to sin this awful mortality. Is it too high to say that from 50 to 75 per cent of these deaths and of this illness is preventible? I think not. The human body was developed through incalculable ages by means of open air and exer-

iving, development and education—the loan, as it were, made by society to the individual to enable him to reach the age when he can restore it by his labor. This average life value has been variously estimated by different economists in Europe at amounts ranging from \$750 to \$1,000. The latter is certainly not an overestimate for New York. Of the 8,000 deaths per annum in New York City, at least 7,300 of these (or about 91 per cent) occur between the ages of 15 and 65 (the period of greatest productive capacity). With \$1,000 as an average life value there is here an actual loss yearly to New York City of \$7,300,000. Add to this the wages lost by tuberculous patients by sickness (\$985,500 yearly) and not counting other expenses connected with their illness and death, the total is \$8,285,500 levied annually in New York by this disease.

*As to the effects of breathing dust-laden air the relative mortality from tuberculosis and respiratory diseases, starting with farmers as a standard at 100, are shown in the following table:

Agriculturist	100	Chimney sweep	249
Ironstone miner	133	Stone quarrier	261
Carpenter	148	Zinc worker	266
Coal miner	166	Iron and steel manufacturer	292
Corn miller	166	Gunsmith	294
Baker (confectioner)	177	Copper miner	307
Blacksmith	177	Copper worker	317
Wool manufacturer	202	Lead miner	319
Tin worker	204	Glass manufacturer	335
Carpet rug manufacturer	213	File maker	373
Bricklayer	215	Scissors maker	407
Cotton manufacturer	244	Potter	453
Lead worker	247		

Other occupation-diseases are writer's cramp and other similar neuroses, lumpy jaw (actinomycosis), miner's lung (anthracosis), nystagmus and serpiginous ulcer of the cornea, phosphorous jaw, the injured and blinded eyes of metal and stone worker, the amblyopia of overshoe makers (from carbon disulfid fumes), lead palsy, caisson disease, sweat shop diseases (tuberculosis, headaches, neuralgias, glaucoma and cataract) and oyster shucker's keratitis or corneal ulcer.

cise. Disease is not needed to demonstrate the wrong of suddenly, *i. e.*, within a hundred years or more, shutting men and women up in houses and forcing them into sedentary occupations. There is enough land and opportunity, if both were only allowed and utilized, to give every human being a livelihood that will permit life of a normal length. Believing as I do that with proper hygienic living, especially in youth, with right lung-expansion and development, no person need have pulmonary disease, I must express my conviction that had Koch succeeded in discovering a cure for tuberculosis, he would have harmed the human race more than all diseases combined. Had tuberculin possessed the power he fondly and foolishly hoped to find, the race would quickly have degenerated into appalling weakness and morbidity. For of course the lungless would have bred the coming race, and imperfect oxygenation of the blood would have not alone chests contracted, but every other organ and function of the body, not the least those powers we call mental and psychic. What a multitude of other diseases are also directly or indirectly traceable to the same source! It is not the comma-bacillus we need to kill but the nidus it finds in poor lungs. Nature is under the necessity of sacrificing both the poor lungs and their pitiable possessors. Civilization can only cure and prevent the disease by undoing the evil of non-ventilation, overcrowding, indoor life, and nonexercise, and by exercise and active labor developing the vitality and strength which successfully resist the tuberculous bacilli now and always in all our lungs, and preventing them from becoming pathogenic.

In the same way, should I take up each of the diseases or class of diseases from which the people suffer or die, it would be easy to point out the causal nexus with immorality, with ignorance (which is also sin), and with selfishness in its multitude of phases. In general paralysis, tabes, abortion, apoplexy, puerperal fever, in diseases of the kidneys, stomach and intestines, heart and liver, in gout, and even in the acute infectious diseases, you know how sexual crime, improper food, alcohol,

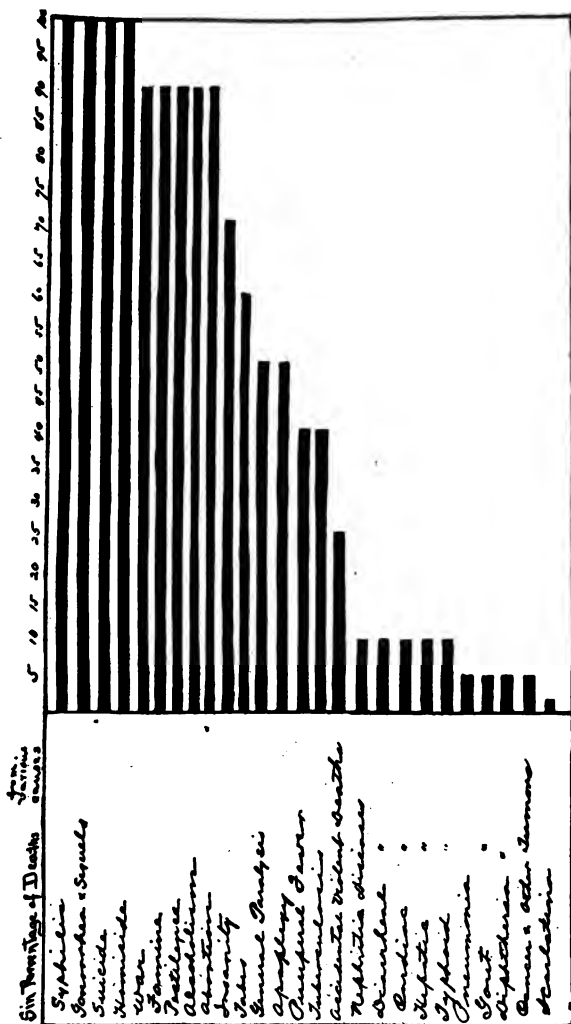
occupation, filth, overcrowding, self-indulgence, etc., play their parts. There is not a day passes with the active physician that these tragedies are not revealed to him, haunting him, if he has a sensitive and sympathetic soul, with eyes of poignant appeal, and the horror of helplessness.

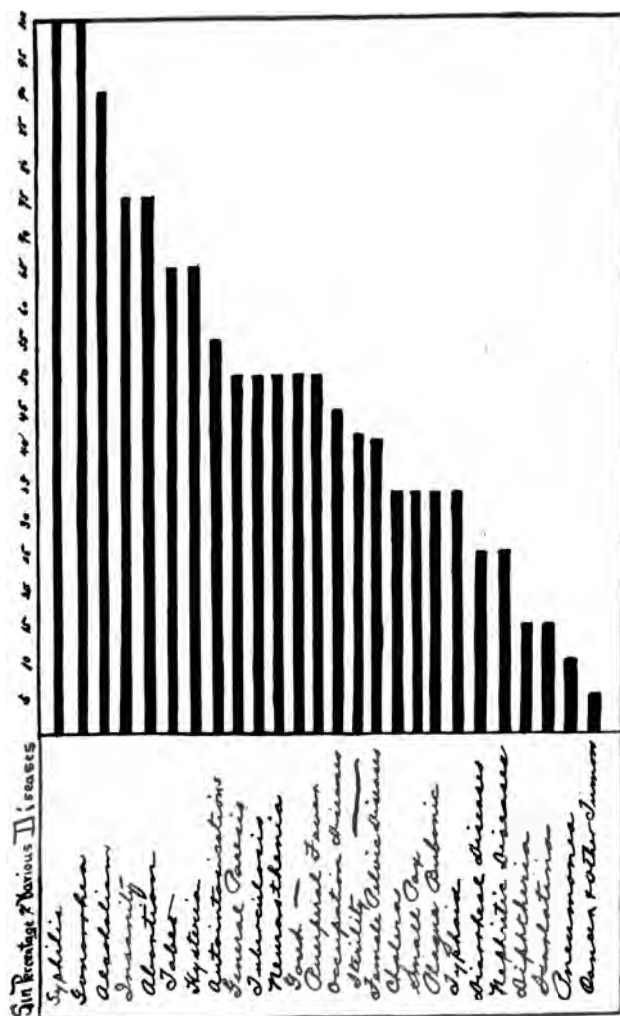
In order to mass these facts together and to strike the eye and memory, I have prepared some crude tables, illustrating what, to my guessing, are the probable percentages of deaths and of diseases due directly or indirectly to what we may call sin. Of course they have no scientific value, and each one would, and may lengthen or shorten the lines, according to his judgment. I believe that in the interests of conservatism I have made many of them far too short.

Epitomizing the overlook we find that according to the best estimates,* the average length of human life in the sixteenth century was between 18 and 20 years. Today it is over 40 years. Since 1880 it has been lengthened by 6 years. From 1801 to 1835 the mortality of London was 29; at present it is between 17 and 19. To what is this tremendous improvement due, and how in the face of the increased mortality from certain diseases has the general betterment been brought about? The answer will reveal the relative functions and values of medicine, and of what is vaguely termed "civilization."

Undoubtedly the frightful mortality during the middle ages and up to recent times, was due to misgovernment and war, to famine, plague, yellow fever, malaria, and smallpox. Our influence in lessening war and misgovernment has been only indirect. Among other causes in abolishing the law of entail and in becoming such a diabolic *flagellum Dei* that Europe had to combine against him, Napoleon wittingly and unwittingly freed Europe and made modern liberty and civilization possible.

*By Professor Finkelnberg, of Bonn, quoted by Kober in his most noteworthy address before the American Medical Association, 1901. See *American Medicine*, June 8, 1901.





Intercommunication is rapidly eliminating famine* as a cause of great mortality. The plague of the fourteenth century is said to have carried off over 24,000,000 people, and last year in India there were as many as 139,000 deaths from this disease. Our recent experience in San Francisco† has taught us, it is hoped, a needed lesson as to the public duty of cleanliness, honor, and publicity.

It is needless to say more, as to smallpox,‡ yellow

*Walford catalogs 160 famines recorded since the eleventh century, occurring as follows:

England	57	France	10
Ireland	34	Germany	11
Scotland	12	Italy	36

Among those of modern times, the worst are:

Country.	Date.	Deaths.
England	1770	48,000
Ireland	1816-17	737,000
Ireland	1846-7	1,000,000
India	1866	1,450,000
India	1877	500,000
China	1878	9,500,000
India	1896 etc.	5,000,000

†Judging from the mortality tables and the work of the Federal Commission, it seems extremely probable that though the first case of bubonic plague was discovered in San Francisco in March of 1900, plague has existed among the Chinese of that city for at least 2 or 3 years, possibly longer. A most important byproduct of this plague experience in San Francisco will be the elevation of the position of the really scientific medical men on the coast. Instead of being grateful that they had in their midst men of skill and training who could diagnose accurately the conditions existing, the press and many of the public villified these men, clamored for their removal, and did all in their power to ruin their positions, and reputations. The report of the Federal Commission will tend to make Californians trust their own good men, and will lead them to hesitate in the future before taking the advice of the inexperienced, the charlatan, a corrupted press, or the professional politician. See *Journal American Medical Association*, April 11, 1901.

‡During the Franco-Prussian War the Germans lost from smallpox but 263 men, while the French loss from this disease was 23,499, or almost 100 times as great as the German loss. The Germans were all revaccinated in the barracks on the outbreak of the war.

In the epidemic of 1881 the smallpox returns of Great Britain showed deaths per 1,000,000 inhabitants as follows:

	Vaccinated.	Not Vaccinated.	Difference.
London	90	3,350	35 to 1
England	98	4,380	44 to 1

Up to the present century the average smallpox mortality in Prussia was

fever,* and malaria, than that so fast as the politicians, the quacks, the antivaccinationists, and public ignorance, will permit us, our beneficent science is able, and will succeed in hunting these evils off the face of the earth. We are even willing to rid the antis themselves of the diseases—after they have duly illustrated in their own persons the folly of their creeds.

The mortality table is one rough measure of the evil. The death-rate is what science and civilization are laboring to lessen. The best statistics we can gather show that the diseases which directly kill are as follows:

Newsholme† gives the following average death-rates for England, annually from 1891-95, per 1,000,000 persons living:

Smallpox	20	Other tuberculu dis-	
Measles	408	eases	660
Scarlet fever	182	Diabetes	69
Diphtheria	253	Nervous diseases	2,288
Whooping cough	398	Circulatory diseases	1,677
Typhus	4	Respiratory diseases	3,747
Enteric fever	174	Digestive diseases	1,116
Continued fever	8	Urinary diseases	453
Diarrheal diseases	652	Puerperal fever	167
Cancer	712	Violence	663
Tuberculosis	1,464	All other causes	1,623

3 per 1,000 population, with, of course, a much heavier percentage in time of epidemic. Since the time of compulsory vaccination the mortality has fallen to 0.03 per 1,000 population. The figures are almost the same for London in the corresponding periods. Schultz, basing his calculation on the statistics of the Imperial Health Bureau at Berlin, says that since 1869, vaccination has saved in Prussia alone at least 74,000 lives.

*In commenting on the report of the Yellow Fever Commission of the Liverpool School of Tropical Medicine, Professor Welch said (*Journal American Medical Association*, March 30, 1901): "Both Lazear, of the American, and Myers, of the English Yellow Fever Commission, have laid down their lives in the search for means of prevention (based upon better knowledge of causation) of one of the most baffling and terrible scourges of mankind. How much more glorious is the cause to which these bright lives were sacrificed than any for which nations are in arms today."

In the expedition to the West Indies in 1802 the French lost not less than 50,000 men from yellow fever.

†Vital Statistics, 1899.

In the United States, so far as we have approximately accurate registration, that is, for about 21,000,000 people, tuberculosi has been responsible for nearly 12 per cent of all deaths, pneumonia and diarrheal diseases for about 8.5 per cent each, diphtheria and croup, jointly, and enteric fever, 3 per cent, measles, whooping cough and scarlet fever about 1 percent each.*

*Another estimate is as follows: (Public Hygiene and State Medicine in the U. S., 1900, p. 21.)

Diseases.	Reported Cases.	Registered Deaths.	Fatality Percentage.
Smallpox	9,222	2,385	25.8%
Typhoid	69,758	13,284	19.0%
Diphtheria and croup	195,783	44,411	22.7%
Scarlet fever	117,847	9,211	7.2%
Measles	217,755	6,424	2.8%

In Paris, in 1897 (*Jour. d'Hyg.*, March 10, 1898), with a population of 2,529,405, the proportion of each disease per 1,000 deaths was as follows:

	Deaths.	Per 1,000.
Smallpox	12	0.34
Measles	823	8.56
Scarlet fever	59	2.38
Diphtheria and croup	291	5.92
Typhoid	241	4.92
Puerperal fever	255	6.95
Pulmonary tuberculosis	9,250	189.90
Other tubercular diseases	1,068	25.93
Apoplexy	2,227	48.64
Bronchitis and pneumonia	5,590	124.90
Heart disease	3,112	67.34
Diarrheal disease	2,904	68.10
Accidents	950	25.10
Suicides	876	18.62
Other causes	19,146	395.92
	46,804	1,000.00

From the Vital Statistics of Germany for 1895 (population 50,929,423), we learn (*American Year Book Med. and Surg.*, 1900. *Medicine*, p. 560) that the death rate per 1,000 was as follows:

Diarrheal diseases (including cholera infantum)	26.14
Pulmonary tuberculosis	21.53
Pneumonia	13.27
Diphtheria	6.34
Whooping cough	3.88
Measles	2.68
Suicide	2.06

We should mark well the fact that however true these statistics may be, they are comparatively meaningless for our present purpose. Our science has not yet advanced so far as to enable us to find out the primary, indirect and real causes of disease. We can do but little to making these figures "open their mouths and speak." Vital statistics have little significance unless we do so. It is, for instance, strange that while recognizing typhoid, pneumonia, tuberculosis, etc., as distinct diseases, there are others, such as alcoholism, syphilis, gonorrhea, homicide, suicide, etc., which are not recognized as such, but are hidden away under diseases of organs, either circulatory, respiratory, nervous, digestive or urinary, etc. Or take the awful infant mortality concealed under the term diarrheal diseases, it is largely sinful and obviabie. Give the babies proper food and air and love and they would not die as they do. Thus the sin-caused diseases by some strange twist of the sin-shirking mind, are kept out of sight. But it is plain that even in those diseases apparently the least rooted in sin there is a large element of predisposition, heredity, improper nutrition, etc., chargeable to sinfulness. Especially does the large mantle of heredity cover a multitude of sins and of sinners. But as scientists, citizens, and moralists we are more interested in preventing than in curing. Diseases are the spearheads, the bullets, clubs and poisons, the instruments only, of causes and powers that wield and use them. Every one of these diseases is the poor tool of precedent forces, and some entirely, many largely, all partially, are the

Scarlet fever	1.64
Puerperal fever	1.29
Mortality rates per 1,000 in Italy for 1897 (<i>Ibid</i>):	
Pneumonia	21.48
Tuberculosis	9.87
Cancer	5.09
Typhoid	4.96
Diphtheria	2.83
Whooping cough	2.53
Measles	1.96
Scarlet fever	1.24
Smallpox	0.32

results of sin. I have known physicians who had no interest in and who sneered openly at the inethical causes of disease. They were plainly more absorbed in their private practice than in preventing disease. I have even known some who were glad to see the sin and the disease rampant because it made practice better. Quacks advertise relief of the effects of disease in order that the cause and the sin may work out their effects *ad infinitum!* In the term sin, besides alcoholism, crime, etc., I include, and justly, ignorance, poverty, greed, luxury, uncleanness, overcrowding, political corruption, etc., etc. Simply as physicians we must work to cure and prevent disease. If, as we have seen, disease is always more or less dependent upon sin, we must, in a scientific prophylaxis, try to stop the sin that partly or entirely generates or allows the disease. A small and simple example is that of pellagra. There are at least 150,000 sufferers from this disease due solely to extreme poverty and ignorance.*

Take as another the sweatshop evil. Cunningham† says: "The sweating system is that condition of labor by which a maximum amount of work possible per day is performed for a minimum sum, in the pursuit of which labor the ordinary rules of health and comfort are disregarded."

Nellie Mason Auten‡ in 34 sweatshops of Chicago, personally investigated by her, found 516 people at work—315 females and 201 males. Foot-power sewing machines were used in all but 5 shops. The hours of work were more than 10 in 9 shops and less than 10 in only 3; 11 of the 34 shops were in rear tenements or had alley frontage, and 2 were in basements; 5 of the shops were badly crowded and 6 were filthy. The ventilation

*In 1899 there were in Roumania 40,000 pellagrics, in Italy 94,400, and scattered throughout other Mediterranean countries 15,600, making a total of 150,000. These are the figures for 1899, which show a great increase over those of 1898, due probably to a poor crop in 1899. (Babes and Sion, *Die Pellagra in Specielle Pathologie und Therapie*, by Nothnagel, 1901. It is due principally to deficient alimentation and wretched hygiene.

†Proceedings Ninth Convention International Association of Factory Inspectors, p. 39.

‡*American Journal of Sociology*, March, 1901.

was bad in 23 shops and good in only 3. The light was poor in 7 shops and good in less than $\frac{1}{3}$ of the whole number. Many had diseased eyes. Almost invariably, especially among the Hebrews, the men and boys were smoking cigarets whether there were girls in the room or not. In the Polish shops the ventilation in the winter was dreadful, all the windows being kept tightly closed to keep down the coal bill. Adequate or proper sanitary accommodations in the shops or on the premises were quite the exception. Often the closets were totally unfit for use.

In time of epidemic the danger to the public health from the tenement-house manufacture of garments is menacing. There are so many shops that it is impossible to inspect them all at any such time to find whether garments are being made where disease exists.

According to the statement of one of the trustees of the Chicago United Hebrew Charities, tuberculosis is the great bane of the garment workers, 1 out of every 25 workers suffering from it. The damage to the eyes of these people is one of the worst features of the whole question. The author quotes from the 1893 report of the Illinois Factory Commission as follows: "In one of the basement shops, where the air was almost unbreathable, 15 girls under 16 years of age were working. Eight of these, on being examined, were found unfit for work from spinal curvature, tuberculosis, irregular development and other ailments."*

*Hon. Carroll D. Wright, Chief of the U. S. Bureau of Labor Statistics, says:

"We hear a great deal about the sweating system, and the popular idea is that the sweating system is the product of modern industrial conditions. The fact is, that it is a remnant of the old industrial system. It is the old hand system prior to the establishment of the factory. Just as fast as the sweatshops are developed into the factory and brought under the laws which relate to factory regulation, just so rapidly is the sweating system being eliminated. The only cure is to make of the sweatshop the factory. The social life of sweaters can be improved only by lifting them to the grade of factory operatives.

"The experience in the South is simply that of other localities, whether in this country or in England. The factory means education, enlighten-

The sweatshop problem is a corollary of the greater one, the density of population. Newsholme* says: "A high degree of density of population is not necessarily associated with a heavy infantile death-rate. The direct consequences of close aggregation (such as fouled air, soil, and often water) and the easier spread of infectious diseases are probably as nothing in comparison with its *indirect* consequences or concomitants. The more crowded a community, the greater as a rule is the amount of abject want, of filth, of crime, of drunkenness and other excesses; the keener is the competition and the more feverish and exhausting are the conditions of life. Moreover—and perhaps more than all—it is in these crowded communities that almost all the most dangerous and unhealthy industries are carried on. It is not so much the aggregation itself as these other factors which are associated with aggregation that produce the high mortality of our great towns or other thickly populated areas."—(Quotation from Supplement to Forty-fifth Annual Report of the Registrar-General of England.)

Newsholme says further: "The number of rooms occupied by each family is of much greater importance in relation to health than the number of persons living on a given area; a fact that throws important light on the state of each tenement house as regards overcrowding. In the Peabody buildings the average number of persons per room is 1.8. Given houses properly constructed and drained, and given cleanly habits on the part of the tenants, increased aggregation of population on a given area has no influence in raising the death-rate except in so far as it is accompanied by overcrowding in individual rooms—an event which is by no means necessary under the circumstances named.

ment, and an intellectual development, utterly impossible without it—I mean to a class of people who could not reach these things in any other way. It is an element in social life. By its educational influences it is constantly lifting the people from a lower to a higher grade."—Abst. in *Literary Digest*, Nov. 10. 1900.

*Vital Statistics, 1899.

In other words, there is no causal relationship between density of population, *per se*, and a high mortality.

The true index of density is the number of persons to each occupied room.

From the report of the New York Tenement House Commission, 1900, one gathers that of the 3,437,202 inhabitants of New York City, 2,372,079—or more than $\frac{2}{3}$ —live in tenement houses, as these houses are defined by law. In Greater New York there are 82,652 of these buildings. Adequate light and air, perfect sanitation, even passable home environment, can not be provided by the best tenement house which is commercially possible on Manhattan Island. The tenement house districts of New York are places in which thousands of people are living in the smallest space in which it is possible for human beings to exist. Crowded together in dark, ill-ventilated rooms, many of which the sunlight never enters, they are centers of disease, poverty, vice and crime. The marvel is, not that some children grow up to be thieves, drunkards or prostitutes, but that so many should ever grow up to be decent and self-respecting. All the conditions which surround childhood, youth and young womanhood in New York's crowded tenements make for unrighteousness and disease. But the most terrible of all the features of tenement house life in New York is the indiscriminate herding of all kinds of people in close contact; the fact that, mingled with the drunken, the dissolute, the improvident, the diseased, dwell the great mass of the respectable workingmen and their families.

Our indulgence of the sin of quackery, antiism, nostrum-vending, unchristian unscience, and medical crankery generally, is an awful expense in money and lives to the American people. Dr. Jacobi (*Journal American Medical Association*, August 25, 1900) estimates that we spend \$200,000,000 annually on nostrums, and that is a small part of the backward pull upon medical progress. Our present indifference to the lethal debauchery of such idiocies as Eddyism, Dowieism, antivaccina-

tion, etc., is to be paid for in millions of lives. These barbaric and immoral atavisms are prolific breeders of the scourges of God, and they prevent a tremendous reduction of the death-rate. May they speedily whip us both into sanity and sanitation! But it is likely to be a slow process, largely because of the degrading influences of quack-favoring, medicine-hating yellow journalism. I read in the *Chicago Tribune* the other day an editorial filled with malevolent and ignorant abuse of medical ethics, because we individual doctors do not advertise our ability to cure disease in the daily papers.

Everywhere when we look into history, into medical literature, or into the actual life about us, we find that all problems of relieving the suffering and expense of disease and of death resolve themselves wholly or in great part into two causative hindrances, sin, and the public indifference to sanitation and the laws of health. As this indifference is itself a sin, one might almost let the one word stand for the one cause. The people demand of us the individual cure of the results of their sin, they are incomprehensively reckless of the duty of preventing the result. They rush into the *peccati*, and then beg us to help them escape the *flagellum Dei*. Hence as a profession our transcending obligation is to continue our thankless task, pursued by us with astounding heroism in the face of opposition and ingratitude, to prevent the evils the people love.

One of the strangest proofs of the public indifference to the value of life is that but one of our 3,828 American millionaires (thank God for *him!*) cares a fig for preventing disease and death. They gave over \$60,000,000 last year for a thousand less needed charities, but, so far as I can learn, not a dollar for preventive medicine or sanitation. And this in the face of the demonstration made by our Health Boards* of their power

*Robert Fletcher, Ph. D. (*New Hampshire Sanitary Journal*, May, 1898), says that Boards of Health are not popular. As a branch of the executive government they do not enjoy the confidence and goodwill of all sorts of people. Local boards of the health find that some of their most conscientious and praiseworthy efforts for the public welfare are met by prejudice,

to lessen the death-rate. The absolutely splendid result of a death-rate of only 12.04 for the week ending June 22, of the great city of Chicago, is almost beyond belief. Within a few years, in an American city of about 400,000 inhabitants, one man alone, by the well-known methods of hygienic reform, has reduced the mortality about one-third, *i. e.*, from about 18 to about 12, and yet this man, who saves 24,000 lives a year, goes on with his marvelous work, unknown and unhonored. If the city of New York should pay him a salary of five million dollars a year, and give him the power to carry out his aims, he would save that city an annual loss of many millions of dollars. Science, it is plain, has outrun morality; we know how to lengthen the average human life by many years, with a proportionate reduction of all the suffering and expense, but we are powerless to do it because, simply, of sin. There is no doubt that sin alone prevents a reduction of the death-rate and sickness by one-half, and a lengthening of life to 50 or 60 years. And we have nearly or quite reached the limit so far as the art of therapeutics is concerned. We can never cure a much greater proportion of the sick until we have better bodies and souls in the patients. The great progress of the future in medicine will consist in prevention. We must lose our life to find it. There are about 1,500,000 deaths annually in the United States—at least 500,000 more than there would be if we could carry out sanitary reforms of proved efficacy. Each wasted life is worth at least \$1,000. That is a useless squandering of \$500,000,000 worth of life. But, according to Dr. Farr, the world's greatest vital statistician, for every death there are, on the average, 2 years of illness in the community.* Add the cost of this, and we have another \$500,000,000 to the bad.

opposition—even to open resistance in some cases—and not seldom by unjust personal resentment against the individual member. The popular feeling may be characterized as one of impatience at what too many look upon as *meddlesome interference with private rights*. [As one of our orators has said "we are suffering from too much *personal* liberty in this country."]

*The great ends of sanitary work are diminution of disease and prolongation of human life. The actual magnitude of the losses due to impaired

Let us make up a table of the total actual expense of sickness and death to the people of the United States:

Lives of 1,500,000 at \$1,000 each.....	\$1,500,000,000
Burial expenses of 1,500,000 funerals at an average of \$100.00 each.....	150,000,000
Loss of wages of 3,000,000 years of illness (2 years for each death) at average annual income—\$300	900,000,000
Yearly income of 110,000 physicians at \$1,500 each	165,000,000
Four thousand hospitals and dispensaries, average annual expense \$25,000	100,000,000
Appliances, instruments, etc., medicines and prescriptions, \$1,000 each for 110,000 physicians..	110,000,000
Values of gratuitous and paid services rendered by staffs of hospitals, etc.	30,000,000
Services of 30,000 nurses at \$750 annually.....	22,500,000
Total, exclusive of cost of public hygiene and sanitation by cities, States, and the National Government.....	<u>\$2,977,500,000</u>

These stupendous figures, three thousand million dollars, and they are conservative ones, fully justify the demand, which should, on the part not only of the profession, but of every intelligent voter, become a command for the establishment of a National Bureau of Health, with a Cabinet officer at its head.

health is stated as follows by the Imperial Board of Health of Germany. The estimate is made from the statistic returns of the workingmen's clubs. In 1891, out of a total membership of 6,500,000, there were more than 2,000,000 cases of sickness; averaging 17 days' duration. These clubs paid out for medical attendance nearly \$22,000,000. Since it is safe to assume that among the remainder of the German population 24,000,000 of whom are old enough to work, the cases of illness are quite as numerous and protracted as among the insured club members, the expense of sickness among the working classes in Germany in one year is not reckoned too high at \$120,000,000. This does not include the loss by *wages*. (Gesundheitsbüchlein, 1896. Abstract in *American Year Book Medicine and Surgery*, 1898.)

The figures are very much larger than they need be, and such a Bureau would easily save a thousand times its expense. The saving or the loss of money is, of course, not a consideration. I have adopted this method of stating the fact in order to bring it home to our imaginations. It is, of course, the saving in life and its expense which the numbers represent, that is aimed at. Thus we have a double warrant as good physicians and as good citizens for joining in social movements to bring about a better civilization. There is no prevention of disease without stifling the causes of disease. Wherever sin exists it works itself out finally in sickness and death. The man who says his sole duty is to cure disease, not to bother about sin or society, is a bad physician, and a poor citizen. In a hundred ways he can influence his neighbors and his nation to lessen disease and death, besides by what the textbooks call therapeutics. The best therapeutics is to render therapeutics unnecessary. In this saving of life and preventing sorrow is therefore reckoned the extinguishing of our own curative and professional function. This, despite the furious hatreds of the antimeditals of a thousand kinds and degrees of shamelessness, is precisely that for which we are giving our lives and labors. Our highest aim and delight is to work for our own economic undoing, that is, for professional suicide.

CHAPTER VI.

KING ARTHUR'S MEDICINE.*

"The Kyng Arthur toke the Kyng Ban, and the Kyng Bohors, and Merlin, and saide, 'Lete us go se oure felowes that be seke.'"

We English folk are most fortunate in that we have a literature of our racial adolescence which, certainly not excepting that of the Greeks, is infinitely richer and truer than any other, and pictures a people of far greater purity and power, beauty and bravery, loyalty and love. Although not "meek" we are still fated to "inherit the earth," and that inheritance has been gained because the man had a youth such as the Arthurian legends picture. The child is proverbially the father to the man, and peace and justice are today the enjoyment of the Indian, of the Egyptian, and of the commoners of England themselves, because Arthur's knights and ladies were what they were. To these legends we must progressively direct our attention as the purest materials of our future poetry and inspiration. As nowhere else, we here find a sincerity, an honor, an unbiased and uncolored revelation of the noble human heart not as yet spoiled by sin or self-consciousness. And now—as Glennie has pointed out—that science has come to us with its all-absorbing, all-transforming interest, revolutionizing most all methods and data of thought, these primitive records of our English and Cymric Paradise must become still more priceless and precious; for science has not explained, and never can explain, life and character, and back to the time when life and character was (or was recorded to be) the sweetest and noblest ever conceived by the fancy of man we must ever go to find the comfort and inspiriting we so sadly need in ages of meanness, doubt, and selfishness.

* Written in collaboration with Dr. W. L. Pyle. *Quarterly Medical Journal*, October, 1897 and *Johns Hopkins Hospital Bulletin*.

Of this early age and of its records Tennyson says that they are—

“Touched by the adulterous finger of a time
That hovered between war and wantonness,
And crownings and dethronings.”

To which our answer must be—Contemptible cant! With all our “progress” and self-conceit we cannot claim that we have lessened the adultery and the wantonness. War and crownings and dethronings have not been unlearned, but where are the courage, the banter, irony, and humor, the give-all-to-love, the loyalty, the inerrant sense of and obedience to right, that made these men and women greater than all their joys and sorrows? Had we but also inherited the “honor rooted in dishonor”! With relief we turn from the emasculate “Idylls” to the innocent sins, the personal warmth, the splendid vices, the thrilling pathos of these our ancestors, for better poetry and more untarnished ideals than the effeminate and self-conscious echoes of later-day rhymesters. Better adultery with bravery and honor unto death, than adultery without these things!

Study of these legends must therefore remain the pleasure and duty of those who love our race-spirit, and any new aspect of truth that may be gleaned from them must be rated as not without value even if it help but a little toward a final true comprehension. It is indeed difficult to keep the mind down to its task in attempting a distinctly medical gleaning. So many alluring glimpses, such paramount witchery, such dominant healthfulness is everywhere so manifest, the soul is so present and lordly, the body so forgotten, or so gloriously proud to serve in silence, that morbidity and therapeusis are kept from emerging out of the subliminal “Unbewusst.” And our difficulty is doubled by the fact that it was so with them, and consequently they chronicled but a few hints, hid only a stray pebble or two which the medical mind may pick out beneath the gorgeous heap of flashing precious stones showered in our lap.

Although the specifically medical and physiologic findings are

thus comparatively few and unimportant, their gathering and lessons are not unimportant; even for the corroborative testimony they bear to general mental and emotional characteristics, they would be worth the collecting and systematization. These beings really had bodies as well as loves, consciences, desires, and wills, and they are brought closer to us, our vision of them made all the clearer, and our love the warmer, by a recognition of their corporeal wants, woes, and wounds. But in the comparison of their medical science, or unscience, with that of later days, the physician finds at least historic lessons of professional interest well worth his labor, if indeed he were not more than compensated in other ways.

We must add another prefatory word, because it is, it seems to us, too little considered by our critics. We allude to the great difficulty—in the present state of criticism and research doubtless an impossibility—of distinguishing between the true records of premedieval life and the later additions. Malory, we know, made free use, but also free additions and changes as regards his texts. He was not the best editor in the world. But how much those who compiled the records he used changed and colored the earlier story, how far they truly represent to us the original documents—these things, of course, must at present make our deductions matters of some doubt. Perhaps it was five hundred years after Round-Table times that those wrote who served Malory with documents, and Malory himself was a thousand years removed. Where are the records of “Blayse the Mayster of Merlin that he did do wryte?” But where are the snows of yester-year? Internal evidence, however, tells us much, and, in reading, the alert sympathy is constantly aroused by the feeling that this or that is surely not the voice of frank Cymric childhood, but is the sorry tarnishings of the Latin-French media, the corruption of a self-conscious “civilization,” or of a mind far removed from pristine juvenility and resilient buoyancy. Some time we shall perhaps know just how much each later age has added to and changed the primitive revelation—every such a

debasement certainty—and then we shall have a body of pure and luminous texts for our infinite reheartening and delight.

Despite Tennyson, neither war nor wantonness was the essential spirit, the inner *Trieb* of this age. Its dominant characteristic, the source of both the war and the wantonness (the latter a believing and a belittling word), was the abounding sense of exuberant life, the fulness and immediacy of health that filled the actors and made of the women eternal models of *das ewig weibliche*, and so spurred the men that they were forced to find outlets for their inexhaustible physical energy in jousting, adventures, and feats of strength and endurance beyond our knowledge and belief. We are not mindless of the exaggeration of the hero-singer and the mythology-maker, but after all allowances have been made that a sceptical science may demand, the central fact remains that, physiologically speaking, these men were marvels of energy and endurance. Every page of *Merlin* and of *Le Morte d'Arthur* bears witness of the fact. What modern athlete could don the helmet and coat of mail these men wore, much less carry them, nay, fight with them on and wield the huge *glayves* they used so effectually? The weight of the helmets is attested by the blows they resisted; the strength of the arms that handled the swords is proved by the fact that the blows frequently clave through helmet and skull to the teeth. When one thinks of men in hot August days covered with these ponderous steel casings, head and face solidly bound with iron, and fighting all day long with the fiercest activity, one can only stand aghast at such wonders of bodily organization. It is perhaps useless to ask if the human arms are capable of certain feats that are frequently reported, as the cleaving at one stroke of a body through, or to the navel, the cutting off at one blow of a head and with such force that it rolls into the field.

Skill and strength for their own sake, the aim of modern "athletics," seem unknown. There are no evidences of useless games and braggart power, leading to nothing. Muscle *per se* is not the *summum bonum*. The everlasting jousting appears the

only game, but this was almost too serious to satisfy any purely "sporting" instinct, and it was of course in every case the actual and necessary exercise preparatory to dealing in life and death in the great business of the morrow. And even in this business of death one sees that simple physical power is, however necessary, only a secondary thing. It is the courtesy and honor, the moral energy and power of will and emotion behind the man's muscles that give the victory and that make him the beloved and revered.

Giants there are (some ridiculously large, by the help of Continental imaginations we suspect), but they are as hideous and detestable as the modern children's books could suggest. Giants and those only physically strong, are cowards and are always defeated by those whose strength is pre-eminently of the soul.

In this connection it might be noted that drunkenness and gluttony are not even suspected. There is here no all-day or all-night sitting at meat or drinking out of skulls till intoxication stops further drinking. There is "feasting," but with ladies always present, always in moderation, always with witty or serious converse, always as a preparation for something better. Moreover, the manner of its doing is always in view rather than the matter—after bathing, *e. g.*, and the putting on of clean clothes.

It was a superstition that a man's physical strength sometimes varied according to the time of day or the intensity of the sun's rays. It is said that "Syr Gauwayn had suche a grace and gyfte that an holy man had gyuen to him, that euery day in the yere from underne tyl hyhe none hys myght encreaced tho thre houres as moche as thryse hys strengthe, and that caused Syr Gauwayn to wynne grete honour."* Another reference to this curious belief is in that narrative of Sir Beaumayn, who is warned not to challenge the Knyght of the reed laund until afternoon, as all the forenoon his strength increased and at high noon he had the strength of seven men.

*To save space we omit the references. They are from Sommer's edition of Malory, the Merlin of the Early English Text Society, and the various French works obtainable, from which Malory drew his stories.

The surgical interest in the results of encounters is that most frequently excited. In the competitive jousts the object was to overcome by superior strength, skill, and horsemanship. In them the mortality did not probably exceed that of a modern game of football or cross-country riding. To intentionally maim or kill was the greatest shame of which a knight could be guilty. Sir Launcelot is said to have unhorsed five hundred knights, winning the victory over them all, and yet none is killed.

Even though severely wounded the spirit is not conquered; with a spear-head in his side Sir Launcelot fights all day, overcoming more than thirty knights. And he recovers in a few days. In the conflict between Balan and Balin they "hadde eyther symten other seuen grete woundes so that the lest of them myght have ben the dethe of the myghtyest gyaunt in the world." Sir Percyval and a knight inflict upon each other fifteen wounds, and they "bledde soo moche that it was merueyl that they stode on their feet." Alysander "had no foote ne myght to stande upon the erthe, for he had syxtene grete wounds and in especyl one of them was lyke to be his dethe." Exhaustion from profuse hemorrhage with the signs of extreme collapse is a frequent ending of a genuine combat. In such accounts the romancer's imagination is doubtless frequently evident, but in all the stories are descriptions too peculiar and detailed not to be the result of direct observation.

We find that it was quite possible to kill a man with a single blow. It is related that Marhaus kills a knight "stark dede" at a single encounter. The most common injuries were about the chest or side, as these were the points at which the spears were most directed. After an opponent is unhorsed a hand-to-hand combat on foot usually ensued, in which the principals hacked and struck at one another with swords; and it is in these latter battles that the most serious wounds were inflicted.

Cerebral concussion is, of course, frequent. The modern lay description of "seeing stars" has its analogue in several passages. It is even said that a maiden gives Alysander such a buffet "that

he thought the fyre flewe oute of his eyen." In one of his combats Sir Launcelot is struck on the helme so hard that "fyre sprange out of his eyen." Cerebral concussion followed by death, possibly by *contre-coup*, is evident in the account that Sir Gawayne smote his (helmeted) opponent so hard that "it went to the braynes and the Knyght felle downe dede."

The common sign of basal fracture—hemorrhage from the nose, mouth, and ears—occurs several times. How graphic is the account of Sir Launcelot's smiting of Sir Galahantyne on the helmet so "that his nose braste oute on blood and eeyrs and mouthe bothe, and ther with his hede hange lowe." He strikes another opponent so hard that the stroke "troubled his braynes, the blood brastyng oute of his mouthe, the nose, and the eres," and the knight falling to the earth as if dead. Syr Gareth and Sir Gaherys are also smitten "upon the brayne pannes" and killed. Arthur gives Sir Accolon such a buffet that "blood came oute at his eres, his nose and his mouthe." We read later that Accolon lived four days, and his ultimate death is attributed to the loss of blood, in ignorance of the fatal fracture. These symptoms, however, are not always precursors of fatality, for Sir Blamore has such a fall "that the blood braste oute at nose, mouth and his eres, but at the laste he recouerd well by good surgyens."

A noteworthy case of foreign body in the brain is that of Sir Marhaus, who was struck such a "myghty stroke" by Trystram "that hit went thorou his helme and thorou the cayse of stele and thorou the brayn pan, and the swerd stak soo fast in the helme and in his brayn pan that Sir Trystram pulled thryes at his swerd or ever he myght pulle it out from his hede." "The edge" of the sword was left in "the brayne pan," and Marhaus ran groaning away. The foreign body could not be extracted by the surgeons, and at last caused the death of Marhaus. His sister, la beale Isoud, got the bit of sword, and by it her lover Tristram was identified as the one who had killed her brother—a great story well known and sung by later poets.

So mighty were the blows delivered on the head that we read of King Pellenore giving his opponent such a stroke on the helme "that he clafe the hede doune to the chynne that he fylle to the earthe dede;" and once more this mighty swordsman "clafe another hede unto the pappys" (breasts). A similar blow is delivered by Sir Launcelot, who "clafe his opponent's hede and neck unto the throte." Again it is said that Pellenore strikes King Lot "thorow the helme and hede unto the browes."

An occasional result of combat was a broken neck. Sir Florence rode against Sir Feraunt of Spain and "smote hym in the forhede and brake his necke bone." Syr Gryffet ran unto a king, the fourth of his opponents, "and gaf hym suche a fall that his neck brake." Launcelot smites a porter under the ear with his gauntlet and breaks his neck. A mighty blow was that of Marhaus who smote his opponent so hard that "he brake his neck and the hors back."

An example of an injury to the neck, and a splendid sample of English irony is, "And Segramor lete renne to a Knight that com shovinge after hym, and he smote hym through the throte that he fill deed up-right; and thein he seide, 'Sir Knyght, with soche morsels I can yow fede and myn other enymes. Now be stille ther and a-bide hem that come after, and telle hem that this way gon the messagiers of the Kynge Arthur, that is their rightfull lorde.'"

Protected by the visor the face is rarely injured. We note once that the teeth were "stryken in tweyne."

For a similar reason thoracic wounds are usually non-penetrating. However, Sir Kehydus is wounded "on hyghe above the pappys" [breasts], and Gawayn gives an opponent such a blow that one "myghte see bothe lyver and long," and again he smote a Saracen and "slitte hym down right so that men myght se his longes." Syr Tor smites his opponent through the "coost [rib or side] but the stroke slew hym not." The ribs of Arthur and of others are broken by the crushing embrace of another's arms. The single reference to cardiac injury we have noted is that where-

by King Mark strikes his brother to the heart with a dagger. The wound was immediately fatal.

A remarkable abdominal and pelvic injury from a single blow is that whereby Arthur in a duel with a giant "hytte hym ageyn that he carf his bely and cutte of his genytours [genitals] that his guttes and his entraylles fylle doune to the ground." Sir Launcelot smites another giant "on the shoulder, and clafe hym to the navel."

Examples of transfixion from a single blow are found. Arthur smites Gryflet and "brake the spere that the troncheon stack in his body." A knight is "smote thorou shelde and thurgh the body." Launcelot smites a Knight "thorugh the brest and thorou-oute the back more than an ell." Probably the most interesting of this class of injuries is recorded in the description of the last combat in which Arthur smites Mordred "under the shelde wyth a foyne of his spere thoroughoute the body more than a fadom." And yet thus transfixed, and with this wound, Mordred is able to push himself onward up to the hand-guard of the spear so as to reach his father, and before dying deals him his death-blow, his sword cutting through the helmet to the brain—a ghastly and powerful deed!

It was a common belief that if a weapon entered the trunk, either very deeply or in a vital part, it should not be immediately withdrawn for fear of instant death. Bors pulls out a spear from his opponent's side and the man swoons. As Gawayne draws out a truncheon from Vwayne's side his soul departed from the body. Lauayne says to a wounded knight "and I pulle oute the truncheon ye shall be in perylle of dethe." Later, Lauayne pulls the truncheon from the wounded man's side and the resultant symptoms are thus graphically described:—"He gaf a grete shryche and a merueillous gryselly grone, and the blood braste oute nyghe a pint at ones that at the last he sanke down upon his buttocks and so swounded pale and dedely." That this was not the invariable result is shown by the fact that Sir Melyas drew out of his own body a truncheon, and swooned, but recovered in

seven weeks by the aid of the ancient monk who had previously been a knight.

Vertebral fractures are occasionally mentioned and invariably spoken of as broken back. Sir Tristram smites an opponent's "back in sonder." Sir Launcelot breaks his opponent's back and in another combat he broke the backs of four knights.

A curious wound of the buttocks is reported as happening to Launcelot, who by misfortune was shot accidentally by a lady "in the thyck of the bottok over the barbys." It is further related that "thenne with grete payne the heremyte got ovte the arowes hed oute of Syr launcelots buttok, and moche of his blood he shedde," "and the wound was passynge sore, and unhappily smyten, for it was in suche a place that he myght not sytte in noo sadly."

Of the injuries to the thigh we read that on one occasion Sir Tristram showed an arrow-wound of the thigh six inches deep. Launcelot is wounded by a boar that "rafe hym on the brawne of the thygh up to the houghbone" [hip-bone]. Sir Vwayne smites Edward so hard that "his swerd kerved [cut, carved] unto his canel-bone" [tibia]. In remorse, Sir Percyual "rofe hym self thurgh the thygh." Another reference to possible self-mutilation is found in the passage which says that Alysander, when told of the amorous intentions of Morgan le Fay towards him, replies that, "I had leuer cutte away my hangers [testicles] than I wold do her suche pleasyr." Happily he was spared the necessity.

Amputations at a single stroke are frequently reported. A knight has an arm stricken away in combat; Galahad smites off the left arm of an opponent; Marhaus smote off a giant's "ryght arme above the elbowe;" Arthur peremptorily disposes of another giant named Galapas, "he shorted hym and smote of both his legges by the knees;" making the combat more equal as regards discrepacy in size of the participants.

Dislocations are spoken of in the following passages:—King Pellenore's lady's horse stumbles and her arm is put "oute of

lythe" [out of joint], and she almost swoons from pain; Launcelot beres down an opponent "soo that his shoulder wente oute of lyth."

Fractures were not uncommon results of combats. Syr Dynas smites an opponent "that with the fall he brake his legges and his arm;" Sir Launcelot smites down the Kynge of Northgalys who "brake his thye in the falle;" another time Launcelot turns on a reviling mob "and of some he brake the legges and the armes."

It is plain that the frequency of wounds and accidents made necessary those who should play the part of surgeons. It is, we think, almost equally sure that there was no official and separate profession. There is no record in the characteristic text of any who made exclusive practice of surgery or medicine. In the *Mabinogion*, a book of Unarthurian and apochryphal character, it is recorded that Arthur "caused Morgan Tut to be called to him. He was the chief physician." It is supposed that this person was probably the same as that Morgan the Wise who prepared the ointment which restored Owain (Gawayne) to a state of health and sanity in the romance of Ywaine and Gawin.*

In *La Mort au Roi Artus*, the "maistre chirurgian" is several times spoken of who attends Launcelot, but later it is said that Boors sends *the knight* who healed Launcelot to the king, &c. Allusion to "the barbours of Bretayne" is of course not Arthurian. There is no mention of a court physician in *Le Morte darthur*, or *Merlin*. It is quite likely that had there been one, some mention of the fact would have been made, and the people would have deserted the hermits for this official physician, as it is said in *Le Morte darthur*, in speaking of the speedy popularity of Modred, "the people were soo newe fangle."

We have much evidence as to the disposition of the wounded.

*His reputation appears to have extended to Brittany, where the inhabitants still call by the name of *Morgan Tut* an herb to which they ascribe the most universal healing properties. The name Morgan has been given to the *Anthemis cotula*, Linn. (camomile) and *Maruta cotula* (dog-fennel).

The sick and wounded were frequently sent to the monasteries and nunneries. Malory says that the hermits of those days were not like those of his time, but "held grete householde, and refresshyed people that were in distresse." It is a hermit who heals Sir Launcelot after one of his many accidents. After combat with Pellinore, Arthur "departed and wente un tyl an ermyte that was a good man and grete leche;" Sir Palamydes goes to a nunnery to be cured. At the "lytel pryory" of Marhaus, "laydes and damosels looked to their hurtes." In fact, not only the female inmates of religious asylums were skilled in dressing wounds, but many of the noble-women were experts in this art. Mayden Lynet comes to Sir Beaumayns and "serched his wounds, and stynted his blood." This damoiselle also stanches Sir Gareth's and Sir Gawayn's wounds. Tristram's wounds are "serched" by la beale Isoud, who was a "noble surgeon." She found in the bottom of this wound "poyson and heled him." It is said that after his fight with Marhaus, Tristram is searched by "alle manere of leches and surgeons both unto men and wymmen." Here there may possibly be indicated some distinction between a leche and a surgeon, such as arose later. The knights themselves were often skilled in surgery. Sir Baudewyn of Bretayn is called a "ful noble surgeon and a good leche." King Arthur attends on Syr Gawayn and "dyd so ransake his woundes and comforted hym." "Sir Mador was had to leche craft, and Sir Launcelot was helyd of his woud."

It is related of Sir Percyual that he "stopped his bledying wounde with a pyce of sherte"—an excellent bit of emergency-surgery.

Of the limitations of the power of the leeches we have ample proof. "Sir Gawayn laye seek thre wekes in his tentes with al maner of leche crafte that myght be had." Even malpractice was recognized, for, according to Tristram, Sir Marhaus "dyed through fals leches."

From these quotations it is made certain that what represented the practice of medicine was carried on by women and men

without any official status or special training other than that picked up by aptitude, circumstances, and experience. The application of the terms *surgeon* and *leche* to women is indicative of the same fact and of the primitive simplicity of all the arrangements. There is little record of much more extended or varied treatment of the wounded than that of *ransacking* and *serching* the wounds, stopping the flow of blood, applying salves, &c. The broken, dislocated, or amputated limbs and the thousand surgical diseases we know were left to the care of the *vis medicatrix naturæ*. The business of life was to give the enemy the wounds. *Væ Victis!* These heroic children of our race stood before disease much as does a child of today, without discrimination, diagnosis, or suggestion of treatment. All diseases to them were alike mysterious. Where our nosologies register thousands, theirs saw but one—"sekenesse."

The pulse was a factor in diagnosis. Launcelot was found lying by a chamber door, and "they looked upon hym and felte his pouse to wyte whether there were any lyf in hym." Malory shows knowledge of the blood-vessels in narrating that Gawayn received a blow that caused a "grete wound and kytte a vayne, and he bledde sore." Sir Gareth is given a wound "a shaftmon brode, and had cutte atwo many vaynes and senewes." Recent wounds were called "grene wounds." Trystram was so stirred by his desire for his fair bed-fellow that "in his ragyne he took no kepe of his grene wound" and breaks it open. Disastrous results are attributed to the breaking open of wounds. Launcelot suffers this accident by getting on a horse too soon after convalescence. Gauwayn is stricken by Launcelot, and an old wound is broken open by the blow, which ultimately causes his death.

Just as infection of wounds is called by the laity of today "taking cold," so we read that Arthur tells Syr Bedwere he has taken cold and will soon die. After being sore wounded by Marhaus, Tristram "ful sore bled that he myght not within a lytel while when he had take cold unnethe stere hym of his

lymmes"—a fact that may refer to inability to walk due to rheumatism contracted from exposure.

All wounds are treated by salves and ointments. Gawayn is healed of a wound by salve, and after the battle between Launcelot and Arthur, "to the wounded men they leid softe salues." Sir Gauwayn was borne "in to Kyng Arthur's pauyllon, and leches were brought to him and serched and salued with softe oynementes." After a battle "they putte salf unto the wounded men." It is evident when infection was expected, as after animal bites, which of course were supposed to be venomous, the wounds were carefully cleansed. After killing the great cat Arthur was led to his tent and unarmed, "and loked on the cracching and the biting of the catte; and the leches waissed softly his wounds, and laide thereto salue and oynementes to cleanse the venym." There is a belief in the almost magical effects of some of the salves. Lynet undertakes to heal Gareth in fifteen days, "and thenne she leid an oynement and a salue to him." After his battle with Pellinore, a "hermyte serched all his woundys and gaf hym good salues," healing him in three days. Sir Pryamus heals his own and Gawayne's wounds by "a vyolle ful of the four waters that came oute of paradys, and with certain baume," in an hour they were "as hole as euer they were." This is plainly an oriental echo. Some of the styptic ointments were very severe, as Morgan le Fay searched Alexander's wounds and "gaf suche an oynement unto hym that he shold have dyed, and on the morne whanne she came to hym he complayned hym sore, and thenne she put other oynementes upon hym and thenne he was out of his payne."

But there is occasionally slow convalescence from wounds. Trystram lays at a nunnery a half year to recover from a wound. Sir Vwayn stops with a layde a half year that "he myghte be hole of his grete hurtes."

Potions and alcoholics are frequently administered. Gareth is given a "drynke that relieved him wonderly wel." Besides being attended to surgically by his magnanimous opponent "Sir

la Cote male taylor is given wine," and a hermit stanches Sir Launcelot's blood and gives him wine to strengthen him.

Healing by enchantment, miracle, and divine influence is a natural belief of the time, and there is a curious faith in virtue, moral qualities, virginity, &c., to heal wounds. This is doubtless due either to the desire of vengeance, or to that secret conscience of sin and lapse from virtue which brought about the injury or illness. The murderer of Sir Gylbert can never be "hole" until some knight goes to the "chappel peryllous" and finds a sword and a bloody cloth that the knight is wrapped in and "serches" the wounds with them. Launcelot achieves this and heals the sick knight with Sir Gylbert's sword and by wiping his wound with the bloody cloth. Balyn's host tells of his son's wounds "that can not be hole tyll I haue of that knyghte's blood." Bayn procures the blood by killing this knight, obeying the old injunction of an eye for an eye, a tooth for a tooth. Sir Vyre has seven great wounds, three on the head, and four on the body, which at one time festered, at another bled, and which could only be healed by being serched by the best knight in the world. At the command of Arthur, Vyre is searched by one hundred and ten knights, but Launcelot being the best knight, alone is able to heal the wounds. The Sangrail is of course effective in curing and healing. The damsel from the castle comes out with a dish "assés grant par raison," and tells Balain's companion (another lady) that the lady of the castle has been long suffering from a terrible disease "comme est de liepre." All remedies hitherto have been proved useless, but "un seul homme viel et anchien" had told her she could get well again through the blood of "une pucelle vierge en volonté et en oeuvre, fille de roi et de roine." The lady is bled at both arms. "This custom," says the pseudo Robert de Boron, "will be continued unto the day when the lady of the castle is healed by the blood of la serour de Percheval le Galois." By a logical reversal is it not possible that later the belief gave rise to the custom of bleeding? If good blood could cure, bleeding the patient would appear to lessen the quantity, so

to speak, of disease contained in him. The damosel with Balyn is voluntarily bled to help the victim but to no avail. The blood of Sir Percyval's sister finally cures the lady but the benefactress loses her own life. It is an old superstition perpetuated in remote parts of Ireland to this day, that venereal disease can only be cured by coitus or genital contact with a virgin. Modern instances of infection have been traced to this superstition.

There is, of course, doubt as to the correct interpretation of the term *mesel*. It may have been used to designate leprosy, as the learned think (somewhat doubtfully), but it may also have been applied to another disease. Our indecision becomes clearer by what is the most interesting quotation as to disease we have met in the stories. In *Merlin* (p. 527, Early English Text Society) we find that King Looth, after censuring his son Agravain for his disrespectful treatment of women, says: "Yef ye yow thus demene as ye say, wite ye well ye shull myscheve, and that shull ye well se." The paragraph ends by saying "and euen as the kynge seide so hym be-fill, after that he langwissid longe, a-boue the erthe for the vilonye that he dide to a mayden, that rode with her frende with whom he faught till that he hadde discounfitted and maymed of oon of his armes, and after wolde haue leyen by his love and fonde hir roynouse of oon of hir thighes, and seid her soche vilonye that she after hurte his oo thigh and his arme, so that it sholde neuer be made hooll; but yef it were be tweyne of the beste knyghtes of the worlde to whom she sette terme of garison, as the booke shall yow devyse here-after, how that it was warrisshed by Gawein his brother and by launcelot de lak that was so noble a knyght." However we may doubt of the cure, it appears from all the evidence that we have here proof of the existence of syphilis at this time. *Roynouse* means itchy, scaly, etc., and the French *rogust* today means the itch. But for patent reasons such a meaning can not be applied in this case, and the context makes more clear the virulent nature of the disease. The location of the lesion, the duration of the disease, and the girl's plain knowledge of its infectious nature are

evident. In the Quest of the Holy Grail Launcelot laments that, through his sinful life he has lost his eyesight and his strength—an addition to the original record, doubtless, by a later hand.

There are allusions to violent epistaxis. It is said that the venerable Joseph “bled sore at nose, so that he myght not by no meane be staunched;” and of Garynsch we read that on beholding his faithless lady sleeping with her paramour “for pure sorow his mouth and nose braste oute on bledynge.” In *Le Conte de la Charrette* Keux is declared not guilty by the queen, because “her nose bled during the night, as it often does.”

Swooning is most commonly due to physical exhaustion and extreme hemorrhage, but we read of instances due to fright and violent emotion. When told Tristram was near, “for very pure Joye la beale Isoud swooned.” Quite natural is the act of Bois, who “dawes” (sprinkles the face) of the swooning Queen Gueneuer. It is said that the hermit knight seeing Sir Launcelot helpless and bleeding “put a thyng in his nose and a lytel dele of water in his mouthe, and thenne Sir Launcelot waked of his swoune.” The “thyng” was probably some pungent substance, not unlike the custom of today.

The obstetrician finds an occasional line of interest. The babe Arthur was placed in charge of Sir Ector, whose “wyf nourysshed hym with her owne pappe.” The significance of the last words arises from the belief that the child’s characteristics are derived from the mother or the one who nurses him, through the milk. In this way is explained the baddish character of Arthur’s foster brother Sir Kay, who, as a babe, was given to another woman to nurse. Explaining the bad character of Keux “et se il est fel es faus et vilains, vous le devés bien sousfrir,” says Auctor to Artus, “que toutes les mauvaises choses qu’il a n’a il prises se par le norriche non qui l’alaita, et pour vous norrir est il si desnaturés.” An instance of premature labor is recorded in the case of Elizabeth, the wife of King Melyodas, who ran into a forest to seek her spouse and by reason of her violent exercise “began to travaille fast of her child and had many grymly

throwes" and was delivered "with grete paynes" by a gentlewoman. A distressing case of rape is that of the Duchess of Bretayne, who was murderously assaulted by a giant who "in forcyne her slytte her unto the nauyl." The body of the babe Merlin is covered with hair, a fact that frightens the mother and women. In *the Suite de Merlin* an interesting medico-legal question is solved by Arthur and Merlin as to the illegitimacy of Tor, begotten as a result of rape by Pellinor upon "une pastorelle," who kept the fact a secret and was married to a "vakier" the same week. The conte is finely told, with true English humor. To the fact that Tor is a King's son is ascribed his longing to be a Knight, all his other numerous brothers, according to the then conception of the laws of heredity, being content with their plebeian lot, because they were the legitimate sons of the cowherd.

The neurologist and alienist will note what may be called a case of aphasia, that of King Uther, the father of Arthur, who "fyll passynge sore seke, so that thre dayes and thre nights he was specheles." Frequent references to insanity are couched in the terms "madde man," "out of wytte," "wood man," &c. Loss of mind through unrequited or unsatisfied love is quite common. Launcelot becomes insane through his love for Queen Guenevieve, runs about almost nude, and is compared to a "wood man in his sherte." He "empayred and waxed feble bothe of his body and of his wit for defaute of sustenance" and became "more wooder." Tristram is another victim of love, and his paramour, Queen Isoud, "maade suche sorowe, that she was nyghe oute of her mynde." Merlin makes a bed that "never a man lye therein but he wente oute of his wytte." Sir Kehydius died for love of this same fair Queen. Sir Matto le breune "felle oute of his wytte by cause he lost his lady." That Launcelot was in modern lingo of a neurotic temperament, appears from a number of hints; e.g., "he woulde clater in his sleep," and a peculiar effect of his great attack of sleeplessness was anorexia and adipsia; "he drys and dwindles away until he was a kybbet

(cubit) shorter." On another occasion he lay unconscious for twenty-four days and nights.

The criminal use of narcotics and poisonous potions is noticed. Queen Morgan le fay gives "Alysander such a drynke that in three dayes and three nyghtes he waken neuer but slepte." King Mark gives Trystram a drink causing him to fall asleep. There is mention of a "remedy that is the grettest poyson that euer ye herd speke of," to poison Arthur while he is at Camelot. Pyonel poisons the apple at the Queen's feast, hoping to make way with Gawayn, who was particularly fond of apples, but happily the victim escapes, the unfortunate Sir Patryse eating the fatal fruit, which causes him to swell and burst and fall dead. We can not imagine what was the nature of such a poison. Unless mistaken for the fatal infection from an ordinary wound, we must believe poisoned weapons were used. Tristram is shot through the shoulder with a poisoned arrow. In medieval times it was commonly believed that certain persons possessed poisons, the antidote of which they alone knew. Tristram is struck in the side by Marhaus with an "enueymed" spear, and had to go to Ireland, the source of the poison, in order to be relieved. Wounded in the arm by a *saiete envenimee* by an archer, Gavain is weakened by the shot, and the next morning he finds that his arm is swollen, and "*estoit assés plus gras que la cuisse d'un homme*," and believes without help he must die. Merlin later prophesies Gavain will soon recover, which comes to pass.

Reference is made to the use of what our balneologists would call a medicated bath. Sir Launcelot "made fayre Elayne to gadre herbes for hym to make hym a bayne." There is one reference to gout. Uterpendragon "fell into a grete sekeness of the gowte in the handes and feet." (This is hardly sixth century wisdom.) Besides the one quoted there is a possible allusion to leprosy in the passages relating to la beale Isoud's confinement in a "lazar cote," and to the lady who "felle unto a mesel." Lamorek desires a remedy to make him whole of the disease which he had "taken in the see," which may have been one of

the numerous complications resulting from exposure in cold water.

The use of horse-litters to convey the wounded was well known.

The embalming of sixty fallen Roman Senators, &c., is surely not of Cymric or English origin.

Is it possible that Guenevieve had some chronic bronchial or pulmonary disease? It is recorded that she "coughed soo loude that Syre Launcelot awaked and he knew her hemynge." Of course a beautiful woman never snores! In one text also she seeks to avert suspicion as regards the blood on the bed-clothing by saying that her nose bled in the night "as it often does."

We thus learn that in the heroic youth-time of our race the indications gleaned from these early records of the practice and condition of medicine were singularly in harmony with the character of the people. We are well aware that in such matters omission of descriptions and details does not imply their non-existence, and yet in general the picture is fairly and essentially accurate and complete. The thousand unconscious hints and touches conveyed in other matters as to things just beyond the definite and intended purpose would have been also given in regard to matters medical if they had been actualities. Had there been more competent physicians than la belle Isoud, she would not have been called "the noble surgeon," and the lives of the heroes would have not been entrusted to her cure. Professional practice did not exist, except as by-play, in the hands of the more intelligent and expert of those a little less busy than the heroes. It engrossed no one's sole attention.

It is also to be noted, as we have seen, that the method of treatment was extremely simple and unlearned except as a result of common sense and self-gained experience. It consisted almost entirely of the highly sound practice of removing foreign bodies from wounds and cleansing them, then in applying some simple herbal ointment with a bandage. The rest was left to God and a little quiet. As to the treatment of diseases other

than surgical, it consisted in perhaps the exhibition of some simple herbal decoction, and a little wine and food. So far the patient was only cursed with the disease, and not, as later, with both disease and physician. Through all was the belief in the identity of disease and virtue, and when possible of the substitution or imputation of the moral health of another for the physical disease. This latter belief was, we must confess, a truthful error, the adumbration of a profound verity which our materialistic age in ignoring falls into an opposite and equally grave blunder. Almost all disease, if we but knew it, has a moral or metaphysical cause and result. For the rest, most remarkable is the entire absence of medical superstition of the distinctively primitive or medieval type. Where else do we find in the adolescence or childhood of a race such an utter absence of medical barbarism and savagery? There is not here any faintest glimpse of delight in the nasty, the obscene, the ugly and the outrageous. There is no pouring into the sufferer recipes outdoing in hideousness the mess of the witches' cauldron.

Now all this, and especially the last-mentioned fact, has most emphatic, exceptional and manifold significance:—

1. It is an added proof of the remarkable psychologic sanity and natural elevation of character, of splendid nobility of soul, on the part of our young racial ancestors. It may not show any medical "science" (that began gestation only a thousand or more years later), but it shows freedom from pseudo-science, medical filth, and egregious superstition. Great must be the purity of a people in mind and body that needs no medicine-man caste, that makes the most beautiful and revered women its best surgeons, and that keeps the disgusting out of its *Materia Medica*.

2. It throws a strong side light for the benefit of literary and historic criticism on the genuineness of documents by which we have come into possession of the pricelessly precious Arthurian legends. So little has this aid and value been recognized that Sommer has failed to include in the Glossary of his superb edition of Malory all medical and anatomic terms. We

have little doubt that it will be found that future critical exegetists will learn that all the allusions, *e.g.*, to embalming, to what pertains to the medically nasty and superstitious, the recondite, civilized, scientific, or miraculous, are interpolations, ill weeds, mostly of Continental and Oriental sowing, and may serve as clues to be dropped in our voyage of discovery backward to the originally pure, natural, and healthy fountain of eternal youth.

3. As a profession the fact may teach us to hark back to the Cymric springs of our English tributary stream and properly to reverence and value its earlier purity. A further study* of medieval medicine will yield us little to honor more, and much to be heartily ashamed of. Slowly we shall see flowing into the limpid English mountain brook the polluting streams of therapeutic filth and nonsense that have rendered the river so nauseous, and that still prevent a newly-arisen and genuine science from ridding ourselves of the loathsome quakeries and sectarianisms that infect its waters and prevent the "healing of the nations."

*An illusion to other articles planned and partially completed to be published in future.

CHAPTER VII.

SOME INTELLECTUAL WEEDS OF AMERICAN GROWTH.*

In no other country or time has there been such a strange luxuriance of intellectual and social weeds as we are now and here growing on American soil. Any attempt even to sketch a historical review of them would require a volume. It seems impossible in speaking of them to avoid the use of the word crank. Our crankism is such a strange jumble of inconsistencies that there is no old word by which it may so well be named. The patient's diseases are old, it is true, but he seems to have all the old quack diseases all at once, and that makes at least a new symptom-complex. The connotations of the term crank are such that the subject is recognized as not actually or entirely insane, and yet always partially so, sometimes and in some ways perilously near, possibly really over the border line. He is also in some respects sane, or possessed of a cunning that adroitly simulates sanity. To an extent, or as regards some things, he is sincere, in one or two positively fanatical, but again he shows the previous psychologic contradiction of keeping some parts of his brain normal. His mind is evidently constructed on the watertight compartment plan. All of this is also part of the suggested meaning of the word crank. Again, he is as to certain objects unselfish, in reference to his hobby furiously so: but there is never absent the attribute of a spider-like watching for "the main chance," a highly developed astuteness in getting money from the greater fools who trust him. He is intensely ignorant, and as inordinately egotistic, and all of that is latent in the word crank also. Lastly, "he" is often a woman, and the word must be stretched to cover that noteworthy fact.

* *Montreal Medical Journal*, August, 1904.

The morbid egotism of the cranks is perhaps the most striking thing that appears in all the books, periodicals, writings, preachings, and doings, of these strange people. Alienists well know how egotism rules the minds of their insane patients. Mentally diseased the cranks plainly are, normal cerebration being disturbed and irregular, or more commonly undeveloped and atavistic. Strip the mind of the higher educated and social results of evolution, whether by disease or by utter failure to keep up with civilized progress, and the egoistic instincts, the primal and basic of the *principii individuationis* are all that it has to fall back upon. Egomania raves and wantons pathetically, but also ludicrously, in every page of these sorry eddyites, "vibralogists," "mental scientists," distant healers, and ranters of a multitude of sub-varieties. The keynote of all the teaching is the infinite value of "I," the unlimited power of it, the eternal emphasis and repetition of it. In the worst cases and magazines the editor becomes one with God, and his sentences for pages are entirely meaningless drivel and word-swash, and one wonders how soon there must be a writ *de lunatico inquirendo* and a commitment to the asylum.

An interesting result of this uprush of commingled egotism and ignorance is that it pretends to be new, while in reality it is the living on of the old dirty medievalism which all historians know so well. One of the amusing characteristics of another "school" of medicine was its claim to be a brand new school, while it affected to look down upon the "old" school of scientific medicine. What was new was the laboratory, the science of the germ theory of disease, hygiene, scientific diagnosis, and the laws of health. What was "old" was the itch theory of disease, the mythical supernaturalism of high potencies, and a remaking of the medieval doctrine of signatures. So in the "New Thought" there is nothing newer than the African's voodooism; in the "New Christian Science" there is no newness, no christianity, no science. In vibralogy there is nothing but medieval magic and miracle mongering, and in osteopathy there is only the old English bone

setter's ignorance, plus the old impertinence of the old quack of the olden time. In other words, the entire brood of modern medical crazes and crankisms, while furiously contending that each is new, is in every cell of its being the very demonstration of the utter lack of the new or modern spirit, of the mental incapacity to take it on, or even to see it. Every modern discovery in biology, sociology, and medicine, is ignored. It is the spook of the middle ages ludicrously gibbering in a really new epoch of science, skill, and reason. It is atavism pure and simple; the old barbarism freed by democracy. It is a sequel of a rapid growth of the intelligent in many, while the rest, not growing, become the neglected residue of stranded incapables upon our hands. Our punishment is the warning that in the last resort we are responsible for the wreckage. The only way we can abridge the evil is to set about the duty of primary physiologic and social education.

Whenever a quack advertises, the most prominent part of the advertisement, the most of the costly space, is occupied by the portrait of the great man. The more a man in the regular medical profession approaches to quackery and secret advertising the more his photograph appears in the lay or so-called professional journals. When vanity or money-making enterprise becomes an outspoken disease this tendency is illustrated most amusingly as well as instructively. In all the literature of faddism and crankery the everlasting photograph appears, and in one journal every contributor's picture heads his article, and each of the dozen "editors of departments" has the inevitable photograph in every week. The *New Thought* advocates and editors are especially prone to this sort of thing. The pictures of "Ella" and of "William" and of "Elizabeth" are everywhere. (They call each other in this familiar way in their papers, so no disrespect is implied here.) Ella's rings and arm are very "fetching," and William's (one of the Williams) stern piercing glance transfixes you with true Hubbardesquesness. But Elizabeth's photograph would certainly scare away an intending lover, so

indescribably terrible is it. "Glasses" would not "destroy that magnetic gaze." She publishes and sells her own books, and praises them too, as straight at you as her photographic eyes would indicate. Each copy of "The Constitution of Man," she says, "is full of power and inspiration," and "contains a speaking likeness of the author." "Experiences in self-healing," "is the latest and greatest of my books" (each is always the greatest), "alive, helpful, inspiring. Beautiful book, good picture of me."

Indeed, the mark of morbid self-consciousness is in every article and sentence of most of the crazy or crank literature so rampant among us. It is not only marked by it, but is rather drenched in it, so that teachers, priestesses, and humble pupils seem to delight in standing and paddling in their own slush. It is an old and well recognized law of disease and insanity that one is unconscious of healthy organs. Most people, for instance, go through life without a moment's attention to their knees, their ears, or their "desires." But let them get synovitis, middle-ear inflammation, or the New-Thought disease, and at once all their attention is absorbed by their knee, ear, or "mind." In all of this literature, "psychometry," fortune-telling, "character readings," "somniaopathy," phrenology, mediumship, "graphology," "astrology," "self-healing," hypnotism, occultism, and a hundred forms of morbid "ministering to the mind diseased" form the staple of "instruction," the substance of page after page of magniloquent nonsense, and more important still, fill all the advertising pages to repletion. The personal answers to correspondents illustrate it to satiety. "How shall I get rid of the fear?" "How prevent mean thoughts?" "Is the love between the sexes incompatible with the highest mental states?" "The jealous wife, "misunderstood woman," misunderstandings with husbands, how to get well, "Soul-mates, the wearing of glasses and the magnetic gaze," bashfulness, the second divorce—these are some of the things the editor takes upon himself to write about to the victims who appeal to him for advice.

"Thought-Force" is a book by one of the omniscient teachers, and its purpose is thus stated by him to be:

A wonderfully vivid book answering the questions: Can I make my life more happy and successful through mental control? How can I affect my circumstances by my mental effort? Just how shall I go about it to free myself from my depression, failure, timidity, weakness and care? How can I influence those more powerful ones from whom I desire favor? How am I to recognize the causes of my failure and thus avoid them?

Can I make my disposition into one which is active, positive, high strung, and masterful? How can I draw vitality of mind and body from an invisible source? How can I directly attract friends and friendship? How can I influence other people by mental suggestion? How can I influence people at a distance by my mind alone? How can I retard old age, preserve health and good looks? How can I cure myself of illness, bad habits, nervousness, etc.?

"Thought-Force" gives an answer to questions like these.

It is evident that here is a new disease in the world, genuinely epidemic, too. The diagnosis is easily made, but is there any therapist would dare suggest a treatment?

When the history of the outbreak of mental disease which its adherents call "Christian Science," "New Thought," "Mental Healing," etc., comes to be written, it will be found that not a little of the responsibility for its existence rests upon New England transcendentalism. As regretfully as one may say it, Emerson is their favorite philosopher, or was once so. Of course, neither this noble man, nor that popular movement, is entirely responsible for the present-day examples of mental degeneration and disease. So far as one can learn, these people have no care for anything outside the dizzy whirl of their monomaniac ideas, or preferably, lack of ideas, and far from knowing anything about so ancient a person as Emerson they reck not and know not of any interest except "vibralogy" and the repetition of a meaningless lot of words. In one or two instances there is a glimpse of the fact that they have a vague idea of an

outside world, as in Wilmans', for instance, but it is only of the world of phantasmagoric newspaper science (as, *e.g.*, "a life powder compounded by a Chicago physician to revive dead animals") taken in all seriousness. In one or two things all are united—in treating disease by "absent or distant treatment," and getting money therefor, in hating doctors, and the "postal underlings" (for excluding their purely commercial fraud journals from the mails). All agree the Cain of the primal couple was sired by Quimby and dammed (*absit omen!*) by Mrs. Mother Mary Baker, etc., and the parents were only "spiritually" married! But the accident of names is as nothing. All names sit lightly on the consciences of these ladies. So under any other names the epidemic must have come. The conditions were such that the result was inevitable.

The psychology of eddyism, best illustrated in the latest sectarian degenerative end-products, is familiar to all alienists and students of insanity. A healthy mind can not read the so-called "new thought" journals for an hour or two without the overwhelming conviction that these people are really insane. The wonder is that they have preserved so much commercial cunning. The money aspect, pay-in-advance for reading notices, for absent treatments, for "psychometric readings," for books, for "vibrations," for insuring "success," for shares of mining stocks, for letter pads, for journals and lectures, and all that—this is never forgotten. It goes on, however, at the same time and in the same columns with the dreariest waste of reverberating words, words, words—utterly without meaning, and utterly without end. There are tons of such printed stuff as this going out every month:

Unity is Non-ethical. It simply is. God is! Energy is! Power is! Light is! Life is! Thought is! Love is! Attraction is! Electricity is! Man is! Existence is the beginning of our search for happiness. Existence is non-ethical. It is a mistake to call God good.

I see that my strength is God, and therefore I know no weakness or tired feeling. I am eternal energy. My peace is God, and therefore I

am eternal harmony. All presence is God, and there is no presence of sin. All existence is God, and there is no existence of evil. I affirm the allness of truth. I am the truth, for there is not anything for me but truth to be. I am the whole truth, as it is undivisible unto parts. I see that I am truth and all goodness there is. I can not be sick for my life is the almighty.

Grammar and spelling are matters of indifference also. Prior to Mrs. Eddy, the fashion of scorning the accepted meanings of words, had been well set by inflamed egotism and transcendental enthusiasm. But to call an unfaith "Christian," and an idiocy "Science," was left to that daring lady and her followers. The habit of misapplying words, of making any word express any fact at pleasure, is characteristic of insanity, and when words themselves lose all meaning and become a jargon of monologue—then the end is not far. In the same sequence of sentences, a mental healer will claim that all drugs are violent *poisons*, POISONS, POISONS, and that they are also inert, dead, wholly without effect on the system. Left without support of religion or government, relieved from duty and poverty, with not a scrap of knowledge, the wrecked mind must feed upon its own vanities and fancies, call itself God, and sell "healing vibrations," "cash always in advance."

In commercial medical journalism, the owner-publisher will usually allow his professional servant-editors and contributors sufficient freedom to write about their little professional matters, as they please, providing, they do not interfere with his advertisements, reading notices, ways of making money, etc., and especially if they, the editors, annually accept a sufficient number of articles lauding advertised preparations—there must not be too many, or they would excite suspicion and destroy professional support, but they must not be so few—and, heavens, not none at all!—as to discourage advertisers. It is strange how this same problem presents itself elsewhere, and even in the divine and inspired journalistic organs of the popular new religiometaphysicomedical crankeries, multitudinously named. In these

periodicals, the advertisements are not confined to any certain pages or parts of pages, and the publishers of the books of the editors fill their own reading columns with reading notices, and puffs, as unblushingly as the worst of our enormously circulated "medical" journals. In one of the most successful of the crank journals, the editors sing their angelic songs of science and drugless healing, in charming ignorance of interspersed pages by the publisher (who plainly has his way with every column as he will) in praise of his Food Company remedies, his Tobacco Company, his Iron Ore Company, etc. He frankly confesses his journal subscribers have subscribed many tens of thousands of dollars to his business enterprises. He is evidently a very astute promoter.

When one makes a study of the earlier weeds of morbid psychologic literature and sects, and after he has grown tired enough of Mother Mary Baker Glover Patterson Eddy and her children, he will next come upon the "New Thought" represented best by a journal of that name, edited by Ella Wheeler Wilcox and William Walker Atkinson. (In proportion to the fame of great ones, the entire set of names must be spelled in full.) The perusal of a half dozen numbers of this periodical will only take an hour or two, and although so far of much interest, and instructive, one will then begin to tire of the thoughtlessness of the new thought, and of its oldness, and especially of its puerile and repetitive lessons. One will get a wearying conviction that if, as the publisher avers, there are 100,000 subscribers who find this childish stuff adapted to their needs, then surely the schoolmaster is not abroad in the land, or he is not doing his duty very thoroughly. Had we space, we would like to reproduce a few hundreds of excerpts we had marked. There is nothing directly vicious or nauseating about it, as is so common in other forms, but it is, of course, indirectly morbid. The people who are ministered to, and treated, are surely sick, very much so, mentally and socially, but the teachers, the high priestesses, and their little amensayers, the priests, are surely much "sicker."

One thousand dollars were given, in fourteen prizes, by the

publisher of *New Thought*, for the best definition, within ten words, of "New Thought." The following were the definitions, winning the prizes—the first of \$500, the second of \$250, etc.:

Being and doing one's best by repeatedly affirming one's ability.

We are what we assert ourselves to be.

Claim that you are what you desire to be.

The cheerful, persistent assertion of the soul's prerogative to rule.

Continuous affirmation of whatever helps us achieve our highest possibilities.

Attaining the ideal in life through thought concentration and assertion.

Mental imagery, personally controllable, governs bodily health and individual circumstances.

Holding constantly before one's thoughts the omnipotence of man's mind.

Human development through recognition and assertion of human divinity.

The control of mental force by positive, concentrated, ideal suggestion.

Realization of ideals by becoming them through force of desire.

Benefiting or injuring others and ourselves reciprocally through thought force.

Fear nothing; love everything; believe you can do anything.

The recognition, realization, and manifestation of the God in me.

It seems, therefore, that the more one claims, regardless whether he has it or not, the more egotism one cultivates, the more one ignores facts and lives in indifference to them, the more one ignores disease and treats himself, or hires "absent treatment," by means of "vibrations"—the more one "realizes the God in me."

One of the "New Thought" journals is called *The Nautilus*. Holmes' poem will be forever spoiled for anyone who has ever read this periodical. "Build thee more stately mansions, etc.," is the motto of the title page each week. One of the recent numbers devotes a page, or more, to the thesis, that "The root-cause of all so-called self-consciousness is really self-unconsciousness, a lack of self-knowledge and self-valuation." So morbid

has morbid self-consciousness become, that it is even encouraged as a virtue. Vanity is here deliriously inflamed. A praised illustration, that extends through the columns of one of the articles, is that of a girl, who spent her life in practising poses, facial expressions and tricks of speech before a mirror, cultivating blushing, as she had learned it was pretty and becoming, etc. We are informed in the fourth column, that "self-knowledge *includes* a knowledge of the universe as a whole, and of every human being as a part of the whole." *The Nautilus*, according to motto No. 2, is "devoted to the art and science of self-expression." Ida C. Craddock (arrested for abuse of the mails with obscene literature) is called editorially "a sweet, earnest, clean soul, who chose, for the sake of forcing her teachings upon an unready world, to butt her head repeatedly against the stone wall of the law, etc." One of the editor Elizabeth's new, greatest, latest, most inspired books, "Just How to Wake the Solar Plexus," explains—let us say *everything*, but chiefly man's relation to the sun, shows what the solar plexus is to the human body, how to control emotions and thoughts, to develop concentration, kill fear, etc., and to insure the attainment of a strong poised selfhood. The advantages to purchasers are shown by testimonials; we have space for only one:

J. F. WILLIS, BRECKENRIDGE, COLO., writes:—"I received more special benefit from one reading of 'Just How to Wake the Solar Plexus' than I have during a period of ten years with medicine chest and doctors' bills of over \$800, aside from much time lost."

The editor prints the following letter from a subscriber:

I am enjoying a vacation and rest from all care and responsibility, where my friends hope to cure me of my belief in astrology—the best place I could ask to be in for study and observations of extremes of character, etc. Please send *Nautilus* here. *Others here as well as myself will appreciate it.* N. Y., Manhattan Hospital for the Insane, Central Islip, L. I. [Italics not ours.]

Of "Elizabeth Towne's Experiences in Self-healing" she herself says:

Those who want real experiences in the new thought and its application will find this book a mine of information. I have shown plainly just how I grew up in new thought, healing myself of almost every imaginable kind of disease from heart trouble to the catching-cold habit, from all sorts of chronic and acute things, and from all sorts of faults of disposition and temperament. I have described every method I used in overcoming not only diseases mental and physical, but poverty as well. And incidentally I have described at length the methods I have used and evolved in the healing of others as well as myself. Not a thing in my experience have I glossed over or omitted. The book is an inspiration and has been written in a white glow of purpose to reveal a soul's efforts and progress and accomplishment, to the end that other soul may see and understand and be inspired to greater self-conquest and self-expression. It contains more of me than anything, or all things else I have written.

To cure asthma, beside vegetarian dietetics, "mental breathing" and physical ditto the patient is instructed to read "Solar Plexus" book every day for a month and get into the spirit of it and shine for dear life all the time! She is to stand or sit straight, chest out, and breathe down and out, taking pains to hold the breath and then let it out more slowly and evenly than she took in it. With each breath she is to mentally affirm, I am whole, or I am love, or I am power—using one affirmation for each day. "Solar Plexus" book tells how. Above all and in all she is to wake up and go at it with a will. To put will into bodily action is the cure for asthma. Will is just what an asthmatic is averse to using, will and persistence. Asthma means a curled-up will and it is not easy to uncurl it.

Baldness can be cured:

Perhaps you will ask me "what thought you are to hold" for dying hair. This item is written presumably for those who have been "holding the thought" without apparent results—as I did for several years. Then it came to me that I must supplement "the thought" with action. So I went to studying causes and thinking out what to do. I've been

doing it. Faith and works will accomplish anything. The only thought to hold for dying hour is the thought of life. Keep thinking it right in with every rub of your finger-tips until it gets to thinking itself without special effort.

The following questions and answers of puzzled correspondents are to be noted:

"When you treat yourself for a cold who is doing the treating, the objective or subjective self? Does mortal mind tell the spirit to do so and so?" B.

There you go calling yourself a "mortal mind." You are immortal mind. When you talk or treat it is immortal mind, talking or treating—talking to itself and treating itself.

"When you pray is it the God in you talking to the Universal God?" J.A.

Ye gods, no! It is the Universal God talking to himself. You are the Universal God. Crawl up out of that little tadpole you and spread your wings in the Universal.

"I wish you would have more to say about treating."

Why, everything I say is "about treating," and everything is a "treatment." Everybody on earth is treating all the time. If he isn't treating for health he is treating for sickness; if not for happiness, then for grief; if not for wealth, then for poverty. Every thought is a treatment, and every individual has the power of choosing what he will think. Choose ye this minute what you will "treat" for. Treat yourself and your relatives and the whole world, etc.

"*The Success Circle*" is the title of an enterprise thoroughly advertised by *The Nautilus* and its editor, with the incomparable photograph attending. It says:

The Success Circle is designed to aid all who are seeking to better their condition by understanding and applying the laws of mind. It is simply a very large class of students who are being taught, through my writings and my silent Word, the principles of success; who are coming into touch with me and drawing inspiration to go in and win for themselves. What I teach I know. I have practically demonstrated every step of the way, from a state of dependence, to one of freedom and

power to command. I know how I did it and I can tell others how. I teach by the Word (*i.e.*, statements of truth) printed in my book, "How to Grow Success;" printed in the monthly letter to the Success Circle, published on page seven of each number of *The Nautilus*, and conveyed telepathically to the members, whom I treat individually and collectively. Water is free to all, but if some man pipes it to your kitchen sink you have to pay him, not for the water, but for the piping. I have piped the Word, the creative power of the universe, and I offer it to you as the printed Word, in my book and paper. For these I ask a reasonable price. You pay for nothing but the book and paper. For the Word conveyed telepathically I make absolutely no charge. My silent Word, or statement of truth, goes out to all the world, and whosoever will may receive and vibrate with me for the upliftment of himself. Each copy of "How to Grow Success" contains a three-quarter length portrait of the author, and is signed and numbered in my own handwriting.

As to the success for the author of the Success Circle there is no question; and none, according to the testimonialists on their part. Mrs. Jones's health and "good looks have improved 100 per cent," and "Mr. Jones's business is everything we could wish for." It brings rain and good crops to Mr. and Mrs. Joseph Jackson, of New Athens, Ill., when their neighbors have none. Mr. Ridout, a land agent, of Bruce, Wis., writes:

The year previous to joining the Circle was quite uneventful in a business way; it started on a jump the very day I got your receipt for the money sent to join the Success Circle. Note that I am in the real estate business, and I sold more land the very day I got your receipt than I had sold in the six months previous, and nearly every day since I have had all the business that I could attend to. People marvel at my success. My daughter found employment the very next day after getting her receipt of membership.

Dr. James W. Cormany, Mt. Carroll, Ill., says:

I am getting every one I can to join the Success Circle. I have increased my business 50 per cent. Now that "ain't to be sneezed at," when I was doing a good business before.

Even electricity obeys the all-commanding Elizabeth, for C. E. writes:

I am happy to say I am succeeding in the line of my desires since joining the Success Circle. Am night watchman in a large manufactory, and some of the machinery is kept running all night by electricity. Now I have noticed that when things go wrong with the electric current or the machinery it is when I am out of tune myself. So now, when I find myself raking over old troubles or dwelling on wrongs, real or fancied, I say to myself, "Look out, old boy, some of this machinery will be catching the melancholic and making trouble for you." Then I pull myself together and look on the bright side.

Without comment, and properly so, the editor of *The Nautilus* copies the following from the *Boston Herald*:

Tenderly she laid the silent, white form beside those that had gone before. She made no outcry, she did not weep. Such a moment was too precious to be spent in idle tears. But soon there came a time when it seemed as if nature must give way. She lifted her voice, and cried long and loud. Her cry was taken up by others who were near, and it echoed and echoed over the grounds. Then suddenly all was still. What was the use of it all? She would lay another egg to-morrow.

Another of the "New Thought" periodicals is called *Freedom*, and is said to be of "Realistic Idealism," published at Seabreeze, Florida. We can not give the editor's name, for she—it is, of course, a lady that edits such journals—has a multiplied personality and many names. These are some of them, scattered everywhere through the samples before us: Wilmans, Helen, H.W.P., Wilmans Publishing House, Helen Wilmans Post, Helen Wilmans, No Signature, etc. Financially Helen seems the most successful of all the New Thoughtists, Mental Healers, or whatever name one should use to describe them, and there are occasional glimmers of sanity to be found in her paper so that one may be hopeful even of this large class of the American people and of their mental convalescence. The greatest of the complaints of Helen and of her publishers and contributors is of Postmaster-General

Madden. The violence of the language against the "postal underlings" of the Government for excluding *Freedom* from second class rates is unworthy of the divine people for whom "there is no evil." And all this in the same issues which contain the legend, "entered at the post-office as second-class matter." It is incomprehensible. The papers "multed" or suppressed, it is said, are "those devoted to the promulgation of ideas not in harmony with the postoffice officials." This seems unnecessary, and contradicted by the columns of reading notices and advertisements of the editor's and publisher's business enterprises, books, lectures, etc., a column or two of one editorial being devoted to the publisher's Letter Tablet, price 25 cents. The editor's financial ability is thus spoken of in her own journal:

Mrs. Williams Post claims to have mastered poverty by using her power to think; that by concentration of thought on money she has drawn wealth to herself as if to a magnet; and certainly her large financial income and magnificent properties in Florida give indications of her success in raising herself from a condition of most abject poverty to one of unlimited opulence. In her famous book, "The Conquest of Poverty," she sets forth her *modus operandi*.

Has Helen attended the school which she advertises—"The Washington Sanatorium and School of the Art of Attracting Opulence?"

Like all these descendants of Dr. P. P. Quimby, of Maine, plus Mother Mary Baker Patterson Glover Eddy, "Freedom" most of all things, hates medicine. Its pathology is as naive as would be expected of those who do not believe in matter or disease, and who have never studied any other kind of science than that in Chicago daily yellow papers. "Chronic disease is the gradual accumulation of dead matter, etc.," and "sickness is an effort to cast it off." "The effort in all cases of healing is that of the mentality, or spirit, endeavoring to free itself from the accumulated beliefs of the ages, etc."

It is thought alone—the right kind of thought—that has the ability to cast every element of decay out of our bodies by quickening the springs

of action within them. Is the liver torpid? Thought can cast out every obstruction to its perfect action. Is the heart sluggish and the circulation slow? Thought can remedy this. And so of every organ; and with every organ renewed how can it be possible that the whole body should lag behind in sickness and distress, and how should it die? We know positively that thought can renew the various organs in the body.

Renewing organs by thought, is, however, a small part of the claim to omnipotence. Helen says that she has an "entire conviction in the ultimate conquest of disease and every form of bodily weakness. This leaves us with the perfect right to assert the possibility of conquering old age and death; and I want it understood forever that I do assert it; that I believe in it with my whole mind, and that I work for it with every breath I draw."

Alopaths (it is always spelled so) and homeopaths, all drug-givers, and such despicable folk are "on the run," and, "Medicine is played out. Every new discovery of bacteria, shows us that we have been wrong, and that the millions of tons of stuff that we have been taking was all useless." "Any drug is a poison. Anything that cannot be digested and assimilated into the body is a poison. The drug has no power of action at all. It is utterly dead." What Helen and company understand by "doctors" may be gathered from this:

I have taken it upon myself to interview some of the persons whose pictures have appeared, with statements over their own signatures that they have been healed; and invariably I have found that the person was not healed at all. One man in this city, when I asked him why he gave his picture and statement which I saw in a daily paper, replied:

"Well, they took me over there and washed me out and filled me up with stimulants and electricity until I felt so good I thought I was healed. While I felt so well, they put the statement, you saw, under my nose for me to sign, and got my photograph. But after I had been home two weeks I was worse than ever I was before."

The faithful healer, however, is thus encouraged, thus encourages herself, or himself, or itself:

What matters if others reject you when you have once perceived the

wondrous potencies of your Personality, the Shrine of the Infinite, the Tabernacle of Genius?

Another Journalistic illustration of the new miracle-mongering is called *The Golden Rule*. It exemplifies the fact that "Christian Science" is a great promotor of that type of insanity which is not inconsistent with financial cunning. This journal claims 10,000 readers, and even if this is not true, the ability to pay the printers' bills on the part of the hundreds of these wild and morbid periodicals, tells of the vast amount of such mental alienation and of how near a great part of the race is to absolute insanity. It is plain that we may not safely ignore the fact, and that "smiling it aside" is not wise. From page after page of *The Golden Rule* not a hint of real thought is to be grasped, except when it comes to the "cash in advance" commands, and then it is all very clear and business-like. Two brothers seemingly edit, but it is "I" that speaks, very ungrammatically, but as "I" says, "graffically." We cannot spare space for interesting examples of psychopathic word-rubbish, in which Brother "I" proves himself divine, and more; that "the universe is a man, male and female;" that "the universe is my institution, I heal the sick, etc." When "a devout member of organized religion," he-they got "catarrh of his head and stomach in fighting the devil, and other troubles," but "when truth came to his vision," he ceased to deny "his desires for tobacco and dancing."

I kept on eating everything that my appetite craved until there was perfect agreement established and my stomach trouble was cured. To my catarrh of the head I said, go ahead if there is something about my head that needs to be taken out or destroyed, I want you to do it. I am Spirit and nothing in heaven and on earth can hurt me. I have healed all kinds of diseases and casted out devils. Every day I am laying hands on the sick and they recover. I have taken up serpents and drank the socalled deadly poison and it did not hurt me. I speak with a new tongue in the way of explaining the Truth. Not only have I casted out devils out of one or more persons but out of the whole universe.

I think infinitely. There is no limit to the harmonious power of my life. I help people far and near.

Terms for treatment is five dollars per month, cash in advance.

RATZLAFF BROS.

"M. D.'s are requested not to send him-them their circulars, and telegrams and cablegrams are not desired, as he-they are so "busy giving treatment, till late at night, for all kinds of diseases, including poverty, and writing letters. Five dollars per month in advance." Mother Eddy has much to answer for.

But the *New Thought* has a still *Higher Thought* which is said to be "a journal of Realization," with the motto, *Ye are Gods*. In praise of its foremost writer of the forelying issue it says he has been a "jack of all trades" and has done almost everything—"carpenter, gardener, homesteader, herder, hygienic physician, pioneer in Kans., Tenn., and Fla., book-agent, farm-laborer, orange-grower, poultry-farmer, professional nurse, newspaper-correspondent, story-writer, poet, editor. At twelve was a dreamer on Socialism, at thirteen an Atheist and in a few months converted, and by rapid stages Calvinist, Armenian, Swedenborgian. At one time a revivalist, later a working student in a hydropathic college. Became Agnostic about twenty-one and remained so till receiving the illumination of the Dawn Thought."

"The next symposium" is to be on "the sex question." It all finally comes back to a question of "health and disease" with these wonderful metaphysical, supernatural journals. One would suppose all the "Gods" (the "editors"—and their "patients," who also are "Gods") were in a strangely bad state of health, although each one of them is "the perfect idea of perfect mind." "I am all; I have all; I know all, for I am the likeness of all; all is now." "Health is the direct result of harmony and harmony only exists through agreement or oneness." "I want to tell you," says one correspondent, "that spiritual poise is all right." "Highly successful in treating absent patients;" "distant treatments for health, wealth, and success" are advertisements of other "healers," and Weltmer has come into the

Higher Thought! Weltmer is one of the "Gods," with all the other advertisers of "drugless science," of "Realization," of "Books of Health," "Breath of Life," "The New Man," "Purity Journals," "Free Healing," "Life's Great Healing Law," and all the rest!

Health is sought so avidly by the self-conscious cranks as to indicate a sad state of disease in them. One of the sects is called *The Ralstonites*. This is no cynical name bestowed by enemies, but one they give themselves. The book before us is entitled *General Membership Book of Knowledge of the Ralston Health Club Leatherette Binding*. On the title page it is said to be (84) *eighty-fourth* (84) *Edition* (84). It is the first attempt so far as we know to build up a secret organization in health-study or health-practice. "If there is any secret society about I want to get on the inside" is the thought which has preceded many strange gatherings of men. There are many degrees of wisdom, at least five, although "hundreds" are spoken of, the "Inner Circle," "personal magnetism clubs," etc. But there are dire punishments for betraying secrets, not keeping pledges, etc., and one is made to feel that invisible detectives and spies are dogging one's footsteps. "No subterfuge or indirect action will remain long undiscovered." . . . "It will sooner or later be discovered and will cause the loss of all rights as a Ralstonite and the loss of respect in the community." The loss of "all rights as a Ralstonite" must be a serious matter indeed, judging from the following quotations:

"No one pretends that there is any other channel of help to mankind except that offered by Ralstonism."

"We believe that Ralstonism is the lever that has been designed by the Creator for the work of uplifting the world."

"For a quarter of a century the great cry of Ralstonism has been its determination to create a new race of men and women."

A few thousand years ago, says Mr. Ralston, men lived to be centuries old. Such is the anthropology of this scientist.

"Glame" is the word he has coined to designate the form of health-vitality. Such is his philology. There are 2,237 maxims listed in this book with "leatherette binding," which constitute the most amusing mess of nonsense, a seriocomic gathering of dietetic and physiologic "tommyrot" beyond compare. Anti-druggism sticks out everywhere. Let examples speak:

Perfect flour-making is rapidly spreading under the name of the Schweitzer system.

Wheat, being a perfect food, was the first cereal on earth.

Onions tell if the bowels are out of order.

Diabetes is the turning of the blood to sugar.

The vegetable kingdom includes everything not in the animal kingdom.

Honey is about one-eighth flesh.

A well-known man who was very fond of sucking pig has recently died a horrible death from cancer.

Eaters of lamb meat are of gentler dispositions.

Meats give brain power, but will not build minds.

The excretions of ministers after sermons show that a thinking man excretes more phosphorus than a laborer.

Dried herring dries up the blood.

Consumption is often due to iron.

All water comes from the clouds.

Nearly all cases of typhoid are due to well water.

Hot milk snuffed into the nose has cured catarrh that defied all medical aid.

The natural treatment of catarrh is different and is in Ralston Franchise at Fifth Degree.

Failing eyesight can always be prevented.

Glasses may be discarded by restoring the eye to its true shape.

"Ralston Gardens" describes the treatment.

The optic nerve is weakened by too much starchy food.

In diphtheria, lockjaw, and other torturing maladies the agonies inflicted by germs are unnecessarily excruciating, malicious, malignant, cruel, relentless, satanic, and devilish.

The body is part of nature's general plan.

The faculties should remain stronger than the functions.

The sunrise sky is the golden field of hope.

The sunset sky is the rich meadow of peace.

In the last decade of the last century Ralstonism reduced the death rate by 10 percent in general.

We are sure Mr. Ralston is correct when he emphatically says "Ralstonism can never die." Neither will morbid ignorance. Seriously meant fun and selling \$25 books for \$4.44 are also eternal.

Not only the *New Thought* but these uncouth faddisms are generally based upon the healing business. *Christian* is the name of a "New Thought" periodical published in Denver, Colorado. The New Thoughtists praise it as illustrating the humorous aspect of the faith. With avidity, therefore, one seeks some relief from the solemn earnestness, serious as an insane ward, of all the other journals and writings. The intent and conscious purpose, it must be emphasized, because unintentionally and unconsciously they are far more mirth-provoking than any writing of Mark Twain. The editor of *Christian*, we suspect, would not claim any christianity for himself or his periodical—"humor" may lie in that—although he tells us he is an "ex-preacher." His wife, of whom he is always writing in his editorials, he says, is an "ex-actress." Regretfully one must confess the humor, if intended, is not present. It is all as dreary as a "comic opera." Of the intended kind the constant calling of his readers "sweetheart" and "darling," and the iteration of such colloquialisms as "in the soup," "bucking against the postoffice department" (Mr. Madden would not let him in), "Shake, my dear girl," "Let him have his jimjams," etc., are illustrative. From a most serious "poem" occupying the whole front page, and composed by a famous member, three disconnected lines should also be excerpted:

"Tinkering of thoughts tobasco,"

"Free from mustard meditation."

"Not a new food, nor a lung-stunt."

Because there is so little fun in our own or in any method of

"Healing," we reproduce a few extracts from a late number of *Christian*. The editor of this periodical should be encouraged because, however unwittingly, he is bringing the eddyistic and vibrational healing business to its legitimate and logical *reductio ad absurdum*. The editor and healer writes:

Give the healer a fair chance, and don't mix mental methods. The other day, a lady wrote, complaining that she did not improve. She said she had written to C and B and A and M at the same time that she wrote me, and had put her case in the hands of each of us. Five healers! It is a wonder she isn't dead or crazy! It is unfair to all of us. Mental medicine should not be mixed. I want you to myself or not at all

I am the light of the world. I am all the light of the world. I am the light in the jack-o'-lantern and the light of the lightning-bug and the light of the sun.

The leaders of this modern metaphysic movement have not not made good in the way of healing themselves and others. Ostrich-like, they stick their heads into the sands of sect to hide their defeat.

The so-called New Thought is smelling a little musty. Throw it away, even if your old body should go with it.

Don't blame me if all the beautiful women on earth flock to *Christian*. It is by the law of attraction, for the I am is "the fairest among ten thousand, and the One altogether lovely."

Christian has had to fight for every inch of ground. It is now the only periodical of its kind on the planet. It is denied second-class postage because it is the voice of the Free Spirit. Let all who are going to die prepare for death. I am here to stay. I defy disease, death, and the devil.

Christian is given five distinct treatments before being sent out in the mail. My wife and I transmit to its pages all the power and glory and love of our own lives. It is our kiss of love to all of you!

Baby Blanche is busy with health, but when she needs a doctor, I will not hesitate to send for one.

The new thought public had rather read how Thomas Jefferson Shelton actually cured himself of corns than to peruse the finest strung, theoretic article which the sedate and saintly *Essence*, or the grave and ministerial *Mind*, or the Puritanical *Ideals* is able to produce.—[*The Nautilus*.]

Some time ago an enterprising healer of the Southwest gave much amusement to his friends and enemies by instructing patients all over the world to lie down exactly at a certain hour of the day, and at that minute the absent healer would think of them and send forth the miraculous vibrations to cure each according to his receptiveness and need. The man had forgotten or had never heard of a complicating difference in time between the clocks of Kansas and Maine, San Francisco, and London, whereby his vibrations, instantaneously transferred, would not arrive at all on time. In the latest number of *Christian*, the editor, on page 8, says he is sending out 30,000 copies of his paper every month, and to each person he also sends the healing and success vibrations. Also, on page 8, he says the name of each of these 30,000 persons is "called every day in the healing-room." It is strange that the miracle-worker forgot his multiplication table. If at a high rate of speed of the caller, and a still higher rate of the vibrator, surely not over 30 names could be correctly read and called in a minute continuously by one caller. The "healing" would, of course, be easier. At the auctioneer's best, 1800 names an hour would severely tax the larynx and would be extraordinarily good business. Thus to get through the 30,000 names each day would require at least 17 hours of uninterrupted "calling" and healing. And yet this particular advertiser is the most sane and rational of the entire multitude of these curious people.

CHAPTER VIII.

CONCERNING CRANK, MEGALOMANIAC, MORPHINOMANIAC, DOTARD CRIMINAL, AND INSANE PHYSICIANS.*

They exist—and a plenty! And their existence constitutes a problem for the profession of constantly increasing growth, seriousness and perplexity.

In the first place they are almost without exception the products of city life; when found in the village or country they are accidental and incidental. Country air and common sense are not likely to beget or nourish them. The logic of facts and necessities, the shrewdness of country folk, still in touch with the realities of existence, still happily “unscientific,” are not favorable to their growth, even if the country practitioner were prone to develop in such directions. They are examples of the sporadic outbreak of a deeper infection called urbanization. In small cities the leaders who tend towards membership are forced into sad compromise or alternate shuffling “between the devil and the deep sea.” They sometimes make expensive sacrifices to His Majesty, but eventually fall into the deep water. The city colleague is more expert at the game.

In the second place they are almost every one of them specialists and “leading consultants,” or are seeking to be such. General practice, or even that highly specialized specialty called “internal medicine,” does not naturally grow these morbid or aberrant types. The general practitioner of the town, village or cross roads districts does not allow himself, and his patients do not allow him, to drift far toward extremism, or into the more

* *Virginia Medical Semi-Monthly*, September 27, 1907.

perfect kinds of self-worship; and fortunately he is under little temptation to indulge in those urban delusions or crazes of omniscience and pseudo-science often masquerading as Science—with a big S. Only specialism can produce the narrow view, the selfishness, the recklessness of truth or error, the mad following of the Zeitgeist, the adulation and worship of power, of success, or of prejudice, which breeds these examples of morbid psychology.

1. Take the crank, not the one so named by prejudice or envy, but the man that must be designated as such even by the most charitable friend. Here, as in all types, one may not proceed on the assumption that the going wrong bars the offender from the ranks of the profession. Until we devise some machinery for actually excluding him, his degree of M. D. makes us, as a body, responsible for his peculiar being and doing. The poor deluded public can take no other view. The law, the lord of licensure, giveth (the degree), but he taketh it not away, except for open criminality, and that seldom, while only the worst dunderheads get caught. The trusting public, trusting that intellect lives under the sign of the red lamp, can not in advance discriminate between the crank and the broad-minded physician. But *experientia docet*, and after one or several trials, it flies to the gospel of Mother Eddy, Mrs. Tingley, "Elizabeth," Dr. Still, or any such offering nonsense. After that, experience will not teach, and the wretches will henceforth walk forever in the outer darkness of the degreeless and licenseless goats—in these times mostly Nanny goats, it is curious to note. Because the truth is that we, as a profession, turned them out into this darkness, or they went there having proved that electricity, instead of a cure-all, has little or no therapeutic power; because Mechano-neuralism is also useless; because one drug is not good for all diseases; because "equalizing the circulation" is a vague name for a vaguer nothing; because the X-ray rarely reveals the cause of the bellyache; because the rest-cure usually neither rests nor cures; because "neurasthenia" is not due to weakness of nerve

force, and naming, or misnaming, a disease does not help the patient; because diagnosis *per se* and therapeutic nihilism are terata, inescapably-joined Siamese twins; because the secretions of the ductless glands do not explain all or many diseases; because a blood-count is unnecessary in ingrowing toe nail or an ordinary headache; because "migraine" is not "of unknown origin," and is not "incurable;" because "drugs for everything" and "drugless healing" are both pernicious mistakes; because few and not all diseases are due to deflected septums and abnormal turbinates; because all diseases of the body are not caused by eyestrain; because the real appendix should not be cut out of every person nor the word appendix from every dictionary; because the terminal diseases are not thereby the fiat of the Almighty, but are the results of functional diseases; because a pound of temporary cure is not worth an ounce of permanent prevention. Ah! one could go on that way for a dozen sheets and not exhaust the classes of little truths and no truths upon which physicians are building whole practices and systems of crankery.

2. Megalomaniac and morbidly egotistic physicians are not wanting in every larger city. Without my knowledge one of my patients recently consulted one, and before the sick patient could say three words to the sick physician, came snap, "I am the author of thirty-four books," and as promptly the patient asked for a bill and departed. Another, occupied every minute of his life in posing his own ghost before the public, greeted me with, "The mantle of Oliver Wendell Holmes has fallen upon my shoulders." The universal president and omnipresent chairman are still seeking offices by all the arts of the most clever politician; the L.L. D. hunters and trustee sportsmen never lose their scent; the would-be professor is after the holder of the office, who in his turn must steadily watch his understudy; at every medical gathering Bombastes Nobody "rises for the purpose"—of airing himself. How many, how many, are they who "boss" their patients in ridiculous toploftiness? How many who strut before their underlings and before the sick, every word and gesture

saying, "Is it not marvelous that one small head can carry all I know?" And the text-book makers, the editors of big medical journals, the writers of solemn "original" articles, the makers of "original" contributions to "learned" societies—how often is science the motive, how often self-display? How many play doctor for the satisfaction of self-conceit? If written in our time, the second verse in Ecclesiastes would have it, "Saith the doctor." The modest, earnest, objective-looking men who love truth and beneficence more than a cock-a-doodle-doo—these outnumber the self worshippers, a hundred to one, and they avoid the societies, the official medical journals, and leave the self-worshippers walking in their own glory.

3. Drug-drunkards and dipsomaniacs are sadly numerous among us. Every good physician knows of one or more instances among his acquaintances. I have had personal knowledge of several cases. It is true that the drug is at hand, but with apothecaries it is as much or more so, and they seem free comparatively from the vice. It slowly comes to recognition that "something is wrong" with So and So; he acts strangely toward his colleagues; his lectures or writings become more illogical, etc., but patients, at least at first, oddly, seem all the more attracted to the man and obey all the more implicitly the foolish advice. The "treatment" finally gets more outrageous and at last there is catastrophe, the condition and circumstance governing the outcome in diverse, but always tragical, ways. The reputation of the profession in the minds of the public suffers. Again, there is no machinery whereby the evil may be checked. It is infinitely pathetic, regrettable. "*Physician, heal thyself,*" grows more impossible with every step of professional organization and progress. Like the hypocritical frenzy against lay nostrum-venders assumed by prominent "reformers," there is no way to abolish the same sins with the profession. The sinner escapes the consciousness of his own desires by crying *Devil, devil!* And the hypocritic loud crying "reformer" is usually guilty of nostrum-vending of a peculiarly diabolic type. Possibly

he escapes the recognition of far worse crimes in himself by the old—

“Compound for sins they are inclined to,
By damning those they have no mind to.”

4. Ripe experience runs so unnoticed into senility, and this so silently and slowly into the early stages of senile dementia that, before it is recognized, the powerful clinician is a dotard unfit to give medical advice. The adulation of his assistants, the desire, or the need of fees, the continuance of an aggravated lust of power—many such motives unite to make the result pitifully pernicious. Perhaps the worst cases and the most numerous are those in which the ambitious son and the dotard father conspire to hand down the enormous established practice like real estate to the rising inheritor. All the parent's prejudices, medical dogmatisms, grudges and general “conservatism” must also be handed down. Medicine is so largely an art, which can not be given the younger man; so largely a matter of individual mentality and disposition very unlike a mantle; so largely a rapidly progressing thing that age and conservatism must hate the forward movement; it is essentially such an affair of therapeutics and pity for suffering rather than establishing or inheriting a practice, that it is shameless and disgusting in the young to allow or compel the fathers to play the part of decoy ducks to lure an unsuspecting public and establish themselves in a practice not gained by individual art and merit. The ignominious proceeding gains its chief authority in the desire to have the reference cases, whence has been derived the lucrative practice, still come from the father's old friends to the son. If the referer of these prized cases has a conviction that every obscure symptom means gastric ulcer and gastrotomy, or that intestinal discomfort dooms to appendicectomy, then the son must accept these follies of modern medicine. If “migraine is incurable” by glasses, and its “nature unknown,” then the big ophthalmic surgeon's inheriting little son must not pretend to cure, or if he cures the credit for it must be given to the treatment of the referer. Mortmain—the hand of the dead

pressing heavily upon the living—is medievalism, even in law, and in medicine it is a horrid anachronism. The chances are that the profession think it beautiful and praiseworthy.

5. Are there really criminal physicians? Yes. It is not, alas, all untrue, the assertions and testimonies that have been made, in our own medical journals, concerning the past and present prevalence of unnecessary gynecologic operations. I know of one instance in which an operation-crazy woman escaped the honest gynecologist who knew and said she had no organic disease, escaped home-friends, was met at the station by the luring operator, who cut out healthy organs and got all her little fortune for the job. I knew a great professor who frequently stated that all of one hospital's dying were sent elsewhere to die; the reputation of hospital and of the visiting powers was preserved by burial from another street number. Ungagged nurses would tell sorry stories. What mean the large number of "lying-in" private houses, "infants reared if desired," all presided over by men with M. D. to their names? Whence the sudden rise to affluence of gynecologists, obstetricians, and others, about whom the word *abortionist* is only whispered? What is the significance of a pseudo-pious praying surgeon who bleeds every patient out of every possible dollar by trick and lie, until his name is the by-word of a whole city, although he have a score of honorary degree-tails to his kite? Last week a famous authority said nothing could really cure headache, and only morphin or purgatives could give a little easing. The great editor who published this stupid trumpery piped his *I say ditto*. And yet hundreds of sound physicians know the cure for the vast majority of such cases, and have publicly testified to it. "Sincere error?" In the first place, a man who boasts himself a scientist has no excuse for violent propagandism of a manifest lie; in the second place he has no right to ignore the testimonies of hundreds of better physicians than himself; and, thirdly, no man innocent of fraud and wrong needlessly shuts out from millions of suffering patients the hope of cure. If he had a spark of sincerity and human love

in his heart he would say, "I doubt its efficacy, but thousands of cures are reported by this method, and you should at least give it a thorough trial." There are many prominent neurologists who care nothing as to the causes or nature of "neurasthenia," "hysteria," etc., nor as to curing the patients, but who drive them mechanically through the money-making rest-cure, special-nurse flatteries, etc., when rest is the last thing they need, and when humoring adds to the disease. There is at least one who uses merciless doses of morphin, and for weeks almost kills patients by twenty hours a day of enforced sleep and four of stupor. The neurologists do not object to being classed with the alienists, or as themselves alienists, and whether in the eyes of the public or of ourselves the insanity expert has done his uttermost to shame and degrade the profession that calls itself scientific. Is regeneration possible?

6. There are some physicians whom a dispassionate commission *de lunatico inquirendo* would be compelled to pronounce so lacking in sanity that the health and lives of their patients are endangered. Cocain, morphin, or whiskey have brought the majority to their undoing, and megalomania with a reckless ambition, most of the balance. Overwork, exposure, responsibility, etc., have little to do with the mental evolution, the average professional length of life being high, despite the startling and disquieting fact that of the various professions the suicide rate of physicians is the highest. As in all the other cases a helpless, nerveless profession is without power or will to act in checking the abuse.

7. As in any case of disease there is perhaps no perfectly typical case of these professional ones, for all diseases present individual variations and complications. We think of a crank as self-deluded, mistaken, sincere; but self-consciousness is so well developed nowadays that the physician-crank is more or less aware that he is going wrong, and that there are good financial reasons for his vagaries, excesses, and exaggerations. The ludicrous egotist will smile and scoff at the colleague who shows

the same disposition in another field. Indeed he usually hates him because he plays the game too badly and openly. He tells the open secret too plainly. There is no question as to the "awareness" of the criminal. The dotard's son is conscious of his ambition to inherit a practice rather than win it by his own ability. In a word, the tendency is for one to illustrate two or three of the classes or types in his single individuality. When one goes wrong in one way he is likely to do so in a second, and a third way. The dipsomaniac is prone to double with the criminal. How frequently is it that the greater the intellect, skill, or knowledge, the more complete the disregard for ethics? The more Napoleonic the abilities the greater the profession's injury unless honor is the guide and beneficence the aim. A great organizer, if utterly dishonorable in gaining his ends, will, as has been illustrated, train up a hundred little medical politicians who fail to recognize that they can not succeed by the chief's methods without having also his intellect. The most successful presidency-getters of great medical associations are often those who are the best examples and representatives of two or three aberrant types united in one person. They represent several constituencies. And the powerful medical editor—better, perhaps, we did not speak of him—but the most striking example is that of one who traveled several times around the world and never paid a cent of his railway, steamship or hotel bills—*i. e.*, never directly, but in reading notices in his journal. I have seen a big roll of bills put into the hand of another editor to enable him to travel in state over a continent. A third instance, as is well known, is that of one who can not write a grammatical or scientific line, or judge of it when written by another. All these accepted or rejected manuscripts to reward their faithful ones or to punish those who did not aid them in their scheme! And "the Organization of the Medical Profession of America"—would it not better be disorganized than do some of the work it is today exhibiting and concealing?

The cure? The treatment? Firstly, it should be remem-

bered that as a whole we are no worse off, nay, we are better off, than most of the professions with which we may be compared. It is by a common ailment, the *morbus Americanus*, that we are seized. And secondly, the vast majority of our profession, the 90 per cent of the rank and file are sound and uninfected. With them lies the treatment and the possible cure. It is the few self-appointed "leaders" who are the sick ones. Stop consulting with medical politicians, schemers and defectives; stop referring patients to them, stop buying their text-books, stop reading and buying their journals, stop listening to their contributions to medical societies, stop aiding their games and joining their "rings;" stop giving them degrees and trusteeships, chairmanships, presidencies and professorships. The cure of professional abuses lies in the hands and hearts of the country doctors and the general practitioners, in a sturdy individualism, a separation from the crowd, a judgment of men not by their "success" and fame, but by what they are.

CHAPTER IX.

SOME ETHICAL QUESTIONS.*

THE IMAGE IN THE MIRROR.—There is a story of a bird that was cured of “the mopes” by means of a mirror placed by the side of its perch. The image of itself was held to be a real mate, and before it there was much strutting, and in cuddling up next to it there was secured the greatest and most satisfactory happiness. The incident is psychologically analogous to the method whereby a certain class of writers and even of physicians find their satisfactions in life. Almost the whole tribe of novel-writers, many so-called “artists” and poets, placing their center of gravity in others, are nothing more than popularity-hunters, posing before the vanity images of themselves in the mirrors of other peoples’ minds. And the fact that no poem thus produced, no novel, or work of art, is enduring, commands the attention after image and imaged are gone, and proves of how little value is the method. If created with the image in mind and for the purpose of pleasing the image, it is not an enduring work—it is mere pose and strut and self-satisfaction. One whom even Carlyle called the greatest critic of his century, found nothing of value in the poetry of Wordsworth, and even belabored it with contempt and ridicule. When the world came to a very different conclusion, the great critic set himself to a rereview of Wordsworth, and after a careful study he reached the same conclusion as before. And yet Wordsworth is more precious to the English race than the combined authors praised by Jeffrey. His age agreed with Jeffrey, Wordsworth never

* Chapter IX of *Suggestions to Medical Writers*, The Philadelphia Medical Publishing Company, 1900.

having received \$700.00 during his life from the sale of his poems. The fact is a lesson as to the trustworthiness of the most expert contemporary criticism, but it is of infinitely more significance as regards the methods and ideals of literary production. Wordsworth was oblivious of the method of the parrot and the looking glass, and hence he created hundreds of single lines each worth more than the million books of the mirror-folk of the last or of any year. The reason that the image-literature is of no value is because the souls of the parrots are of no value. Only slaves and toadies and sycophants wheedle a master, and to choose the populace as a millionfold master is not a proof of lessened but of increased stupidity and cringingness on the part of the image worshipper.

All this is beside the mark as regards physicians? By no means! First, as to medical literature it is entirely as apropos as to the lay variety. Take our medical journals; what large proportion of writing and of editorials may not properly be called image-literature, posing of authors before their own images in the glass? If not exactly this, how much of it is not slyly looking out of the corner of the eye at the success of the journal? In our books, what a number are created with the authorial eye on the image—for vanity's sake rather than in forgetfulness of self and the image, and with sole attention to pure scientific and sanitary progress? The profession shares the universal habit of ignoring the great and unselfish work, and is too prone to let its earnest, image-ignoring writers and delvers go unthanked, and to wear their lives out unhonored. The keen-eyed editor of the *Practitioner* recently wrote:

It is, of course, in accordance with the general way of this best of all possible worlds that the one officer of the Association who has no share in the butyraceous honors so freely bestowed is the Editor of the *British Medical Journal*. He is the Atlas on whose shoulders rests the world of the Association. But one notes with regret, though hardly with surprise, that there are no compliments for him, and he must be thankful if he escapes a vote of reduction of salary for refusing to turn the *Journal*

into a literary dustheap where cranks may shoot their rubbish. The whole thing is a pleasing illustration of what Mr. Pecksniff called "human nature."

There is often fully as much heroism and purity of ideal in the renouncing of clap-trap, posing, and popularity-hunting, on the part of many book-makers, editors, and writers as in soldier or operating-surgeon. To say the true, the needed, and the right thing when it is so easy to say the pleasing thing is a noble though often a thankless task. In our medical societies how frequently is the mirror-strutter in evidence? Certain men come to talk or read papers, apparently only to air themselves and their personal conceits. In our medical science, how much effort is wasted on the thing the mirror-parrot has devised, discovered, or first advocated? How many operations have been for the sake of the image in the mirror rather than for the single good of the patient? How accurate are the statistics compiled with an eye on the personal mirror reflex? Personal ambition and the desire for the respect of one's fellows may be useful things, but they are not the highest ideals, and may so easily degenerate into parrot-satisfactions that they are to be kept in proper place and well in hand. And, like mirror-literature, mirror-science has no enduring quality. When the indiscriminating have wasted their breath, the beggar for their applause finds himself and his fads forgotten. The world will not long honor those who fawn for its honoring. This is the irony of egotism.

LITERARY INTOLERANCE.—Every editor, and this includes even medical editors, occasionally receives angry letters from subscribers concerning some article admitted to his columns. It not seldom happens that the same mail brings other letters expressing pleasure from the same articles. The complainants may be right in their criticisms and the praisers wrong in their pleasure, because even the best of editors may occasionally err in selective judgment, and the most of us may make altogether too many mistakes. But whether right or wrong, the

critics usually proceed upon one or more of several erroneous assumptions. The first pertains to the right of an editor to expunge a sentence or paragraph with which he disagrees in an otherwise acceptable article. That he has no such right is shown by the fact that the critics would be the first to deny it in the case of their own contributed letters or articles. The second faulty assumption is that an article contributed—and the same usually applies to reports, news items and quotations—receives a half endorsement, if not a whole one, by the editor from the mere fact of insertion in his journal. It seems stupid to republish in every number the old stereotyped notice, "This Journal does not hold itself responsible for the views or statements made in its columns except those in the editorial department," and yet the letters of occasional correspondents make one sometimes feel as if this were advisable. One may even have recalled to mind the stanza of a great poet:

"There was an old man of Thermopylæ,
Who never did anything properly;
But they said, If you choose to boil eggs in your shoes,
You shall never remain in Thermopylæ."

Again, it may be suspected that local feeling and even a personal animus, indirectly at least, may have rarely stimulated a passionate protest. If such is ever the case the fact that editors are not omniscient may perhaps be a sufficient reason for partial pardoning on the part of others, although not by any means authorizing an overkind leniency toward himself on the part of the editor. "Not guilty, but don't do it again," may perhaps be the verdict in both cases.

The facts suggest a thought as to the value and praise-worthiness of toleration. The crudest way to put it would be to say, too ungraciously it is true, that for the subscription price no reader acquires the right to grumble when displeased, nor in accepting it does a journal guarantee to please always and absolutely. An editor, indeed, may be considered fortunate if

he pleases thrice while displeasing twice. Alas, that the single negative sticks in the memory more persistently than four positives! In a larger way it might be urged that culture and civilization consist in great part of the ability to listen to and observe things at variance with and even repugnant to one's private belief and to do so without acrimony. Magnanimity is one of the rarest and most noble of human characteristics, and it should not be forgotten that magnanimity is neither indifference, egotism, cynicism, nor pity—but something far higher than any or all of these. It is so very easy to convince oneself of one's own personal superiority that the nobler virtue always insensibly tends to become the lesser. Is it not true that every political partisan needs to read a representative journal of the opposite party? What a deplorable narrowness does it show when readers demand that their journals shall voice their own peculiar views, and when a disagreeing or opposing view rouses anger! All of this is ultra medical, and extremes of party feeling do not, of course, occur in the medical profession, but glimpses and relics of old-time prejudices occasionally appear at the editorial desk—although we protest that none have done so at ours for some three months! These atavistic remains, as we have hinted, consist in most emphatic reprobation of what some luckless contributor has said. Might one definitively reply: Why not blame the author instead of the editor or publisher, and also why demand the uttermost agreement on the part of one's fellows in matters either of science, ethics, or esthetics? Equanimity is a far more lovable virtue than unanimity.

PROFESSIONAL CONTROL, OWNERSHIP, AND USE OF PROFESSIONAL LITERATURE is a matter of most serious concern to our guild as a whole, and individually to every physician. The question at issue is simply this: Does the literature of our profession belong to us or to the lay publishers whom we have allowed to publish it without remuneration to us? When a publisher pays a physician for literary work the matter is on a different footing; but when the physician gives scientific articles

or lends them, without compensation, to be published in a journal, it is plain that these articles are still the property of the author or of the profession, not of the lay publisher. To cite an illustration, we epitomize from a letter to the editor of the *Journal of the American Medical Association*, published March 6, 1897, an instance there set forth in detail, for which we can not of course vouch, and for the truthfulness and accuracy of which the name of the writer of the letter is the only proof we have, except we believe that the charges there made were never answered. Who does not deny the truth of a charge, by his silence admits its truthfulness—is, we have heard, an old rule of evidence.

According to this letter, the lay publishers of two medical journals refused the editor and publisher of the *American Year-Book of Medicine and Surgery* the courtesy or right to abstract or make quotations from the articles published in the journals belonging to said lay publisher, or to reproduce the illustrative cuts of these articles. This refusal was intentionally made more insulting by the fact that the editors and publishers who thus denied, accompanied the denial with the statement that they "had always allowed the free use of the original matter contributed to it for all reputable purposes, provided that due credit, etc." Moreover, it was expressly denied that this course (or refusal) was "characteristic of our general policy," and it was said that this "one instance" was absolutely exceptional, etc. The editor of the *American Year-Book* at once proved that there were other instances in which the free use had been refused (*e. g.*, to *Sajous' Annual*), and expressed his thanks for the insult that the *Year-Book*, *Sajous' Annual*, etc., were not serials to be classed as published for "reputable purposes."

As every scholarly physician knows, the *Jahrbücher* and other epitomes of medical science published in Germany have been of inestimable service to the profession. In the two serious attempts made in the United States to do such work,

this powerful lay publisher and his obedient medical editor refused the use in any way of the medical articles given or lent them gratis by members of the profession, and then wrote of themselves the following astounding, Pecksniffian, disgusting words: That they would be the "last to countenance any action which might interfere in the slightest degree with the fullest and freest dissemination of medical knowledge." Thus to misjudge the acumen of their readers was as wonderful an error of intellect as the deed was an error of morals. The lesson to be gathered is that the profession should own and control its journals, and, especially, that being offered a number of excellent ones thus controlled and owned, it should support them rather than journals whose lay owners have always used them for purposes of unadulterated financial selfishness, and for creating a monopoly of medical literature for which they have not paid the producer a cent. A slavery so absolute and extreme as this was never before illustrated in the history of the world, and it is a disgrace of which we should make all haste to purge ourselves.

BIG BOOKS, OR LITTLE BOOKS?—In a general way, and particularly as to certain things, the authors of medical books and the buyers should be the judges as to the style in which their volumes are made. They have heretofore left this matter almost entirely to publishers. In the highly important matter of the size of books the financial advantage of the publisher may run squarely counter to the best interests, not only of the author, but also of our profession, and of the dissemination of knowledge. There are certain exceptions, but we believe they are few, to the rule that small books are by all odds preferable to big ones. Books of reference, which are used only a few moments at a time, may be large (when it is impossible to make them small), but almost every other kind of book should be made as small as possible. The reasons are sufficiently evident:—

1. The smaller the volume the less will be its expense, and

the terrible and continuous tax laid upon every member of our profession for books should be made as light as possible by every legitimate means in our power. We have before us a volume containing more words and costing only one-sixth as much as another on the same subject. The first is "handy," and small, and easy to read; the expensive one is heavy, big, and hard to read.

2. The smaller the volume the more it will be read, because the reader will not so soon tire in holding it. Many large books are frequently not consulted because, unconsciously or not, one shrinks from the labor of taking them down and holding them.

3. The necessity of condensing material into a smaller number of words is, as a rule, of positive and decided benefit to books, both in style and in clarifying the knowledge conveyed. There are limits, to be sure, beyond which epitomization should not go, but few authors have ever reached them, and most of the volumes on the market could have been made up of one-third or one-half the number of words with manifest profit to reader and to knowledge.

But even if the number of words remains the same, most of these volumes could have been easily reduced in size and in weight 50 per cent. We do not urge a reduction in the size of the face of the type used, although it is true that small type on the right paper is far less wearing than large type on bad paper; and when the right kind of paper is demanded by us we may usually ask for a relatively smaller type than is often thought necessary.

Broad margins are pleasing to the eye, but they are not necessary in scientific books in which esthetics must give way to considerations of utility and lessened expense. Moreover, one of the greatest reasons for broad margins is sadly ignored. This is because the margin next to the "back" of the book must be broad in order to neutralize a wretched slipshodness and a silly economy in binding and in paper. When binding and

paper are cheap, then the wide expanse next to the stitching must be allowed, because the book and page will not open out and lie flat, and this wasted paper and space is necessary for the curve and to hide the expensive economy.

By far the greatest reasons for the existence of unnecessarily big books is that buyers foolishly, and publishers cunningly, prefer them large. But is it not long past the time when physicians should have learned the folly of the "most, *i. e.*, the biggest, for the money," instead of the most and smallest? Every buyer should earnestly demand of publishers that offered books shall not be as huge and imposing, but rather as small and serviceable as possible. The grand array on the shelves, whether for one's own satisfaction or to make an impression, is scarcely a valid excuse for depleting one's purse and for cumbering one's bookcases. "It is magnificent, but it is not—literature."

Still another powerful reason for the big book lies in the fact that it is the bigness that seems to justify us in paying the big price, whereas we should prefer the small book, if equally complete and scholarly, at the same or even at a greater price. Let us quit buying books by the pound!

And lastly, it is only the big book at the big price that pays the canvasser's expenses. At present we prefer to pay a man several dollars to convince us of the value of a book, rather than to order it direct. It would be far cheaper and better to order the complete volume "on inspection," paying express charges both ways, rather than to order from the "dummy." Publishers, we believe, would be willing to accept this offer, and we doubt not would prefer this plan of selling their books.

We have reserved to the last the single consideration of dominating importance—that of the paper used in books. It is by means of poor, bulky, cheap paper that books are made poor, bulky, but expensive. By paying for paper several cents a pound more than is customary, books could be tremendously lessened in bulk and weight. This additional cost of thin, opaque, and tough paper increases the cost of the volume

none or only a few cents, so that is of no concern, and it is counterbalanced a dozen times by narrower margins, smaller type, and better stitching. But besides size, etc., the outweighing benefits of better paper are the flat page, ease of ocular labor, and durability. There is a vicious tendency toward the use of "loaded," calendered, and rotten paper—principally because, it is said, illustrations "show up" better upon it. This is a fallacy. If the right quality of paper is used, illustrations are as effective on a "dead-finish" paper as on that with a sheen that irritates and tires the eyes.

THE SIZE OF BOOKS AND ARTICLES.—As to articles in medical journals every editor and experienced writer knows how much more acceptable, how much more likely to be read, are short, concise, rather than long and verbose ones. Every writer for journals should limit his article to an aspect as specific and single as possible, and not try to cover too much space or too many phases of a subject. Write more often if you please, but drive one nail at a time, and drive that home. It hardly needs saying that one should not attempt writing upon a subject until he is thoroughly certain he has something new or valuable to say. Writing for vanity's sake or to advertise the writer is the bane of medical literature. We once knew a writer who in his everlasting rehashes of well-known facts or opinions was in the habit, when sending it to the editor, of accompanying his MS. with a \$10 or \$20 bill. The number of our medical journals hungry for "copy" hardly makes this necessary nowadays, except when the offering is of the most flagrant worthlessness. Having something of value to write about, endeavor to tell it in the fewest words possible—subject of course to the proviso that you do not adopt the horrible note-book or reporter's style, in which sentences are without a subject, or a predicate, or some other necessity of English. Beware of staccato speech and other evidences of vocal paralysis.

As to books, medical authors should use their earnest influence to stop the intolerable manufacture of bulky books, and

especially of "Systems." The day of these 5, 10, or 20 volume systems, is, we hope, irrevocably past. The busy man has no time for them, in the first place, and he is beginning to grow conscious that they are born of the publisher's desire and not of the scientist's demand. His arms grow tired of holding them, and his pocket-book thin in paying for them. They are commercial in origin, not professional. One man's intelligence and experience should penetrate and control every line of monographs—that man a master in his special field. To this rule there is hardly more than one exception, and this relates to books merely gathering and epitomizing the progress and literature of a period or a subject. And even here the exception is not so decided as one would suppose, as special and ripe editorial judgment and criticism are required not only to winnow, and condense, but also to indicate a scientific rating. In this class of books also heaviness and excess of size are less objectionable than in others, because, like dictionaries, they are essentially for short-time reference, scarcely for a half hour's continuous use. Medical men of all kinds, whether writers or only readers, should unite in sharp scorn of books made big for the publisher's benefit, in which cheap and thick paper with too broad margins shows clearly the motive and the deceit of selling printed and folded paper instead of scientific literature. Good, thin, light, and opaque paper is expensive; poor, thick, heavy, and rotten paper is cheap; many a book-buyer in his ignorance does not know this, and publishers are well aware of the buyer's mistake and encourage it, to the profit of the seller and the loss of the buyer.

COLLABORATION-BOOKS.—In the preface to one of the least defective of modern composite books we find the following words as the best excuse the authors can adduce for their work:

"It is unnecessary to discuss the 'collaboration-method' employed, which has too often demonstrated its value to need either defense or explanation in this place, except to point out its greatest use, and the one to which no doubt it is indebted for its success—namely, that by

its means the student gains the point of view of a number of teachers, reaping, in a measure, the same as would be obtained by following courses of instruction under different teachers."

We feel constrained to point out what we think are some fallacies lurking in this statement. It would be true if the authors treated the same subjects; but it is plain that when they treat wholly different subjects the student learns only the opinion and teaching of the single author who writes on a single subject. It would also be true if the editors dared or would be allowed to so edit and transform the articles as to make them fuse into an organic or a homogeneous unity. When an author signs his article he would not allow an editor thus to make over his article. The result is that the whole body of teaching of the work represents the scientific and therapeutic results and beliefs of no one brain, and not one of the hundred separate authors would entirely, or frequently even in great part, assent to the teachings of the articles bound up with his in the same volume. This seems to us an argument against the modern composite book, in which the multitude of authors preserve their distinct and separate individualities.

There are other objections to the composite book of the type criticised: Confined as he is to a definite and altogether too limited space, each author must deal in too many glittering generalities. To the student or practitioner the articles are not helpful; they do not enter into those details of diagnosis and treatment which are precisely what the uninstructed need. In a vague and soary way, the author who is brilliantly getting over his ground, showing off his own learning, but who is utterly indifferent to the state of mind and needs of his uninstructed reader, will say, for example, that a certain treatment may be tried, and that it sometimes succeeds and sometimes fails. All of which is quite as instructive as, and far less amusing than, the experiences of Violet, the Quangle-Wangle, and the 600 crusty crabbies. What kind of cases are adapted? How should the treatment be carried out? By what kinds of doctors?

Why and when does it fail? A hundred such questions arise in the mind of the average reader of nearly every page of the patch-work composite book.

Still another objection is evident: The learned authors must display an erudition equal to that of the other fellows; and thus meaningless omniscience stares at one from pages of mathematic formulas and diagrams for instance, which not a reader will ever comprehend or get a ray of light from. Colorless abstractions and showy shams are thrown in as if the poor student were to consummate a mental prestidigitator as the great author—just as poor orators prefer their profoundest and strangest bits of knowledge with, “You have all read,” “As all are aware,” etc.

All of which is especially true of the big “systems,” running into shelves-full of dumped-together treatises by a hundred authors, in which the unfilled gaps, the overlappings, and the contradictions have long been the butts of ridicule of men with scientific and literary training. Such books are good for publishers, but comparatively useless and surely wasteful of the money and house-room of physicians.

The only composite books that we judge of use to professional men are those in which the work of individual authors is rigidly wrought over, supplemented and rendered organically unitary with the rest, by the dominating control of the responsible editor. Better if the individual authors merge their work anonymously into the homogeneity desired. But, when possible, and better yet, we think, if authors preserve their own independence and make their work stand for what it is, the product of personal experience and judgment. All good work rests at last upon the character of the single man who actually did the job.

Such are some of the dangers and disadvantages of composite books, chiefly those of the large systems of many bulky volumes, appearing one after another, and requiring a number of years before the completion of the set. There are, of course, correspondingly great advantages in the properly edited single volume

composite-books, in which, as we said, "the work of individual authors is wrought over, supplemented, and rendered organically unitary with the rest by the dominating control of the responsible chief editor." One of these advantages lies in the perfection of specialist-work. Science has become such a vast aggregation of facts and experience even in a specialty of medicine that we are fast approaching the time when the masters can only be specialists of a specialty. Thus, the best exposition of such a sub-specialty can only be made by a person who has given long attention to it. Another advantage is that a composite-book by a number of authors may be issued in a shorter time, the results and opinions chronicled being more promptly brought down to date, than if one or a fewer number of authors worked a longer time upon it. The often exemplified danger of lack of a harmonious view and oversight of the whole by a weak and a careless chief editor remains. To this, attention has been called. On the other hand we must not forget that the work of a single author treating many subjects may be narrow, inaccurate, prejudiced, and lack precisely the unity, the large outlook and clear overlook gained by the composite work of a number of authors, in proper subordination and with free control by a chief editor. American editors and publishers have excelled those of other nations in attaining the proper balance between the extreme of the huge heterogeneous undigested masses of dumped together multivolume knowledge by one or two hundred independent authors, and the myopia of books by a single author.

We hope that our writers and publishers will continue to hold this literary and bibliographic preeminence. But it can not be done, we think, if we do not renounce both the helter-skelter of the interminable "system" and the individualistic narrowness of the monograph.

It can be done by choosing the good things of each—the fulness of knowledge and experience of the specialists unified and mutually completing each other, through the domination and completeness of control of the chief editor. Individual

writers must be willing to subordinate their single work to the perfection of the whole, and the editor in charge must not shrink from demanding such subordination and unity. In this way our medical editors and publishers can retain their present superiority in the art of scientific bookmaking.

DUPLICATES OF ARTICLES SENT TO TWO JOURNALS.—Recently one journal charged another with the downright stealing of an article from its columns without any recognition of the supposed first appearance in the columns of the injured journal. Some months ago a journal abstracted an article and credited a certain journal No. 2, in which the original appeared after its publication in more widely known journal No. 1. The editor of journal No. 1 expostulated in vain. In both these cases it was subsequently learned that the authors of the articles had supplied the two different journals with the same article—a proceeding wretchedly impolitic for author and publisher alike. The deceived journal justifiably feels like using a harsher adjective than *impolitic*. We trust no author will ever treat us that way. It may be wise to publish an article synchronously in two journals, but it is not honorable to keep either editor in ignorance of the fact.

MISUNDERSTOOD PROVERBS are constantly quoted, even in medical literature, by rote, by those who do not know the meanings of the words they use, and people who hear or read the quotations imagine these have some significance, when in fact on their face and without etymologic knowledge they have no significance whatever. One of the most common of these misused and misunderstood sentences is Shakespeare's "One touch of nature makes the whole world kin." As Shakespeare and his cotemporaries understood the line it meant something very different indeed from what the pseudo-literary quoter of today thinks. The word *touch* signified *defect* or *bad trait*, and not a good one as is supposed, reaching down to the elemental or primal quality of life and feeling. The word came into use from confusion with the word *tache*, sometimes misspelt *touch*. The

whole passage (in *Troilus*, iii, 3) as used by Shakespere shows he *reprobated* not *praised* the "one touch of nature."

One of the most senseless of these proverb-blunderings is the very common "The exception proves the rule," derived from the Latin *exceptio probat regulam*. Now, any school-child must see that an exception invalidates, not proves, the rule. It positively disproves it. The explanation of the non-sense consists in the fact that the old signification of *proves* is *tests*, as when St. Paul advises that we should prove (*i. e.*, test) all things to hold fast that which is good. The Latin scholar also knows the definition of *probo*.

In the saw, "The more haste the worse speed," a similar contradiction occurs if the words are considered apart from their history. In Old English, *speed* really meant *success*, and the proverb thus becomes luminous. So, also, "God speed the plough" has significance if we understand the word *speed* properly as *prosper*.

In "God sends the shrewd cow short horns," shrewd means ugly-tempered, or bad-dispositioned, not clever or intelligent; and in "Handsome is as handsome does," handsome does not mean beautiful, but neat in the sense of skilful.

CHAPTER X.

HISTORY AND PSYCHOLOGY IN WORDS.*

There is a story that a society of learned philologists made it the first of its by-laws that no member would be allowed to contribute a paper on the origin of language. By this means only was it possible to shut off the vague theory-spinners and prevent unendurable boredom. To a great extent the reason for the rule still holds, because as yet we have hardly gathered facts sufficient to enable us to form any very clearly warranted induction as to the manner in which animalian cries become articulate and thought-conveying language. Noiré has traced the beginnings of speech to what has been called the yo-he-ho theory—the cries of men working together. Similar guesses are the bow-wow and the pooh-pooh theories or other imitative plans of the reproduction of sounds of animals or of inorganic nature, as well as of those of man himself when emotion passes into cries of various kinds.†

The creation of language by onomatopoeitic methods is still a fact today, and in poetry the imitation of sounds by words is quite an art, as, *e. g.*:

“Rend with tremendous sound your ears asunder,
With gun, drum, trumpet, blunderbuss, and thunder.”

“I love the language, that soft bastard Latin,
Which melts like kisses in a female mouth,
And sounds as if it should be writ on satin
With syllables that breathe of the sweet South;

* Chapter X of *Suggestions to Medical Writers*, The Philadelphia Medical Publishing Company, 1900.

† A writer, Mr. J. Donovan (*Mind*, July, 1892), contends that articulation originated in the impassioned intonations of festal excitement. One cannot help feeling that before festival and religious dance came into being language must have become a pretty complete and satisfying instrument.

Whatever theory we may accept as to the origin of language, none will deny that it is and remains primarily the product and expression of emotion. The ultimate origin of the word *mama*, whether the infants' cry for food, for the mother's breast (the *mamma*), or for the mother herself, is lost with the childhood language of the race, but its preservation in all languages with one or all of the three significations given, is a suggestively beautiful fact. . Hunger is the first of all bodily feelings or desires, and remains the most fundamental and continuous of all. Physiology is found to be the mother of language in an ever varying but real sense, and in a multitude of ways of which the proofs are found in nearly all the words we use, at least if we run them down to their rootings. A curious demonstration of this may be seen in the fact that almost all of our common words pertaining to the nose begin with the sound *sn*. We need not stop here to show this in detail, but the word-hunter may find lively interest in looking up the etymologies of multitudes of words, such as, in English, *snaffle*, *snap*, *snatch*, *snack*, *snarl*, *snark*, *sneer*, *sneeze*, *sniff*, *snip*, *snipe*, *snite*, *snivel*, *snob*, *snore*, *snort*, *snot*, *snout*, *snub-nosed*, *snuff*, etc.

And by physiology as the mother of language, I do not mean the outgrown theories which were so prevalent when a crude Darwinism blew men off their feet and topsy-turvey with its explanation of the origins and the causes of the changes in words by the conformation of the palate, the mouth, throat, ease of articulation, laziness, or even deformity. The emperor, said one professor, might change the map of Europe, but no man could possibly influence language. The phase or partial truth existing in such dogmatism should not make us inattentive to the fact that primitive people are not unimaginative, that the origin of language is by logical necessity a highly imaginative and, moreover, a conscious act. There is a somewhat silly attempt of many evolutionists to ignore and belittle the part of consciousness in the development of biologic phenomena, and especially those of *homo sapiens*, and in linguistics it is particularly

fallacious. The process of language-making never began and never ends; it is going on all the time. It is partly conscious, partly unconscious. Of course it is absurd to speak of the individual consciousness, or any number of such, as only in the smallest degree contributive, in changes such as those represented by Grimm's law, extending over many centuries and a dozen races. And the discussion as to whether the people as a whole, or only their intellectual leaders originate the changes, is also futile, because, as we see about us every day, both function in this way. There is a continuous mutation going on in language just as there is in the human spirit, an interaction of conscious and unconscious, of the thoughtless people and the purposive intelligent leaders. M. Bréal who has written an excellent book on Linguistics, thinks the doctors of language are powerless and yet with delightful self-contradiction he says that "for many centuries the cultivated Englishman spoke French, and left his own tongue to the people, and since it is the province of culture to retard the development of a language, English adapted itself to the common want without the impediment of an imperious tradition."

The reconciliation of the different views as to people and cultivated, consciousness and unconsciousness, would appear to be in the thought of the larger psychic personality of the race; perception and consciousness are indeed indistinct in the populace, but rise to clarity in the leaders; this permits the creative impetus and changeful spirit to be first grasped and recommended by the clearer-headed initiative of the intellectuals; but the advice is accepted, rejected, or modified, by the less articulate, yet still not nonexistent consciousness of the common people. It must not, dare not, be forgotten that language is an organism and cannot be created without a creator; it is an art product and demands an artist. No philologist can be an atheist—so long, at least, as he is a logician or even a scientist—for philology is a branch of biology and it requires the merest modicum of intellect to see that all physiology is mothered by

mentality. Physiologic function is teleologic and is based upon purpose and planned outcome. Evolution can only be the unrolling of what was initially inrolled. The materialistic scientist has the greatest and most amusing difficulties in trying to avoid the teleology inherent in words and in facts. The blindest of evolutionists is he who makes evolution blind; the most ignorant of scientists he who makes science ignorant; the sorriest of physiologists he who does not see that as function precedes structure, so does mentality precede function. Organs are but bundles of cells, and it is cell-hunger and cell-function that make organic hunger and somatic function. As no cell exists for itself, so we are driven by a remorseless logic to the inference that back of cells is intention, using cells, together with their organs, as tools of design and for purpose. We thus reach a conclusion, one which open-eyed observation indeed does not need, that language, however physiologic in secondary origin, is essentially psychic, because all physiology in final analysis is psychic. Even hunger is psychic, a means to an end, that end the purposes for which the entire organism exists. The infant's *mama* means "I will be a man and do what manhood requires."

When it strikes the imagination with its full force one is astonished to recognize the immateriality of language. It is the oldest, the most enduring, the most used of all the things created by man, and yet it is neither here nor there, neither now nor then. The living reality behind the phonating larynx seems almost to forget and to scorn the air-waves that die the instant they have been born. The *λογος* hides from its word, scarcely recognizing it; no echo of the printing office reaches the faraway editor-in-chief. Like aerial hummings our alphabetic letters come down to us as if from the ghosts of voices dead many thousands of years ago. The mutations of sounds during these cycles are the most subtle and indeterminate of studies of the phonologists. It is mathematically true that no two persons have ever uttered a sound or a word alike. Sound has three components: 1. The pitch, or number of air-waves of which it is composed. 2.

The energy (loudness, emphasis, accent), or the force and extent of the vibrations. 3. The timbre (overtones, qualities), or shape of the waves. All these factors can never be alike in two persons. Twins or dromios can never disguise their voices to deceive even strangers.

That language must be held the most perfect, artistically, musically, philologicly, and as an instrument of the psychic life, which has the purest vowel-sounds, which uses them most, which secures the few modifications of these necessary by the free parts of the tongue, the teeth, and the lips. The ideal language must be highly voweled, leaving these pure tones unbestialized by throat or nose, and securing the slight and few modifications required by light touches of the sensitive, educatable, responsive, mobile tongue and lips. Despite the danger of overvaluing one's own, it is true that of the modern languages of civilization, English undoubtedly comes far nearer this ideal than any. In language-formation, as in the psychic life of the racial or national speakers, the origins and rootings are far off and deep, so that change must be slow, and conservatism strong. Hundreds, and even thousands of years may be required to demonstrate decided changes and progress; in the imperishable immateriality of language this progress is shown with a conciseness and vividness unequaled by any other product of the mind. And shown, I would say, in an easily comprehensible and exciting way which should stimulate philologists and educators to popularize the knowledge and bring it even to the common schools and the common people. There are innumerable phases and facets whereby history may be mirrored and seen, and as many connections of past and present—every word, indeed, is such—to incite the liveliest interest in the dulllest pupil or the most erudite investigator. Philology is not language-learning. One may be able to speak or write but one tongue and yet be profoundly learned in linguistics. As a method of mental evolution and gymnastics there is no study comparable to it. It has few or no uses; it will not help one to

acquire money, fame, or power, but it will help one to understand this world better even than any of the physical and biologic sciences. Neither will it much help one to acquire literary style, except to choose words somewhat more fittingly, for style is another name for genius, and genius is not taught or learned by man.

One of the most curious things is man's incuriosity—first, concerning the world in which he lives, and second, about himself. Science began with the study of the stars rather than of the earth, and even now the average person knows more about astronomy than about geology and geography. Man desires to learn about the most distant and objective before he does about things nearer himself. Centuries and cycles go by before he thinks of asking a few questions about himself, and when at last he does so, it is of bones and dead structures he desires to know. Physiology has but recently arisen and the physiologic conception of disease and of cure constitutes a new era in medicine just opening to our view. But even today it is only corporeal physiology that interests us. If it is of history we are eager to learn, it is of kings first, and wars, and nations—the history of religion, of commerce, of the people, and of civilization, is the last and least we seek. When science arises it is first of stars, worlds, and stones, and when biology is born, it is at first and for a long time only to morphology that we give attention. So confirmed is the habit of outward looking that much of our modern science is materialistic. The looker denies himself, and the subject denies the subjective, forgetting in this philosophic suicide that subject and object are necessary correlatives, the one nonexistent without the other. There can not be a physics without a metaphysics. Hence of psychology we know little. The ancient oracle seemed to voice the spirit of life when it said "Seek never to know who thou art." And yet it is true that,

"A man's best things lie nearest him,
Lie close about his feet;
It is the distant and the dim
That we are fain to greet."

And language proves and illustrates both truths. Of all the things he has created it is the one that lies nearest to man's soul and the most precious. It is, or it may be, one of the most exact of the sciences; it is the first and most continually used instrument of our psychic nature, it is the most suggestive paleontologic "find" in the world, its every word and letter is almost an epitome of the history of civilization—and yet few know or care a fig for it! People may know half a dozen languages and be utterly ignorant of the abecedaria of linguistics. In schools children and even adults are taught a hundred things of infinitely less inherent value, abiding interest, or enlightening beauty. If I had a child I would rather have him a master of one book, that of Taylor, on the Alphabet, than of a dozen things rated so highly by our schools and colleges. How few of even cultivated people know their A B C's! When the child handles his alphabet-blocks he fumbles with a million mysteries leading directly and naturally into every possible human science and into all history. And yet not even his teachers have cared to follow up any of these clues, and the ignorant pupils grow up to become in their turn ignorant teachers. Language illustrates how like dolts we stare in dazed incomprehensiveness at a thousand riddles flung down before us from the sky and from the past. We may even pick up one of these skilfully fashioned artistic enigmas and finding that it can not be eaten, or used as clothing, or fired out of a gun, we throw it away and go on with our stomach-fillings and our fantastic blunderings.

According to Taylor the letters of the alphabet were invented about 1900 B. C., and, except a few, are conventionalized pictures derived from the Egyptian hieroglyphic writing through various stages of ideogram and phonogram. At first they were pictures or representations of actual objects; second, symbols for suggesting abstract ideas; third, verbal signs standing for entire words; fourth, syllabic signs; fifth, alphabetic signs, or letters, representing elementary sounds. The consonants were the vertebras of the organism and were first invented, the vowels

being of a considerably later origin. Even today Semitic has no true vowels. The greatest achievement of the human race—for such is the creation of the alphabet—is of Semitic origin, and to De Rougé, a Frenchman, we are indebted for the knowledge, a discovery dating only forty years back. Great aid has been given by the discovery of the scrawled letters of the alphabet on the drinking cups and plates of children, the broken pieces of which, thousands of years old, are more valuable than the most prized original MSS. of the greatest poems. What a strange fact is this discovery, proving again how little we think of the most important things, the tools of intelligence, and the *sine qua non* of civilization. How many thousands of years were required for pictures to become letters we can not imagine, but the greatness of the task is suggested by the fact that of all earth's races only the Phenicians have ever invented an alphabet. Its value to humanity is shown in the adoption with marvelous rapidity by all the races of the world of this one alphabet fashioned in Egypt. This universal adoption of it is a condensed account of universal history, with aids and more than glimpses into politics, numismatics, commercial supremacies, religious evolutions and revolutions, and almost every phase of civilization.

A was originally the picture of an eagle.

B was that of a crane. In Corinthian the upper part of the B, representing the crane's head, was not closed, but left open, resembling somewhat our letter Z.

D was a hand.

F was the horned asp, the vertical stroke representing the body, the bars the horns.

G is what is left of a picture of a throne.

H in combination with T, the Greek theta, was once the picture of a pair of tongs.

K was a bowl.

L a lioness.

M was an owl; its two ears are what is left.

N was the water-line, or wave-line.

P was once the picture of the shuttle.

Q was the angle of the knee.

R the mouth.

T the lasso.

Y was introduced in Cicero's time to represent the Greek upsilon, which up to this time had been represented by **V**.

Z was reintroduced in the first century B. C. to transliterate Greek words.

U and **V** were made separate signs in about the fifteenth century, **V** representing the consonantal and **U** the vowel sound.

W came first into use in about the eleventh century. It was recognized that in English there had developed a sound that was neither that of **V** nor of **U**, but a combination of the two. To represent this *we* sound, two **V**'s were first put together, then the last stroke of the first letter was made to cross the first stroke of the second. Finally they were joined, as we now have them, and are of course called *double U*.

In the fifteenth century when two *i*'s were at the end of a word the last one was "tailed" in order to distinguish better. The same was done with our initial **I**. This form was finally called **J** and was used to denote the consonantal sound. The Hebrew *Jahveh* with the initial sound of **I** or **Y**, we call *Jehovah*, with our **J** sound. We say *John*, the Germans, *Johann*.

Paleography, and even graphology, are alluring studies, and the development of our handwriting leads one into a hundred bewitching by-paths. Taylor shows a little instance in the evolution of our sign for plus (+) out of the Latin conjunction *et*. The sign — (minus) is probably a modification of **M**, the first letter of *minus*. There is striking proof of the popular ignorance and misconception as to letters in the common use of the old English *th*, or thorn-letter. It is, says Taylor, "the survival of a Scandinavian rune which the Goths before they left their early home on the Baltic had obtained from the Greek colonies on the Euxine, centuries before the commencement of the Christian era. It proves ultimately to be derived from the Greek *delta*, which, after making the round of Europe by the

northern seas, rejoined in England the other letters of the Greek alphabet which had come by the Mediterranean route." It proves out that our letter *y* for the thorn-letter is a mere substitute of writers and printers for the thorn-letter. People who wish to appear as antiquarian or philologic scholars, without giving themselves the trouble of learning a single fact to justify the pretense, constantly pronounce, even indite, imitation lines, in which the modern printer uses a *y* for the old *th*. Every Fourth of July hundreds thus air their assumed antiquarianism by pronouncing *y*^o as *ye* instead of as *the*. When the old printers could not "space out" properly, or had no type of the thorn-letter, they used *y* instead of *th*, and *th* was represented by *y* in such words as *y*^e (for *the*), *y*^t (for *that*), *y*^u (for *thou*), etc. In old medieval manuscripts are found: *ye*, *yai*, *yair*, *yaim*, *yat*, etc., and the words **should** be pronounced *the*, *thai*, *thair*, *thaim* (them), *that*. The alphabet of the Chinese is not properly an alphabet, but has stuck fast in the pictogram stage; it is composed of some 40,000 conventionalized pictures. All words are of one syllable, and position in writing, and accent in speaking give the grammatic relations and functions. The Japanese have advanced to a syllabary alphabet, but there stopped short. This was a great improvement on the Chinese, but still appallingly clumsy. There was an interesting account in the newspapers recently of the work of a typesetter in a Japanese printing-office. The letters are so numerous that little boys have to run all about a large store-house for types to get those desired. When the boys bring the proper letters the typographer puts them in place.

We thus recognize one of the advantages of a small alphabet. Combined into words these letters tell us and only by inference all we know of the civilization, character, and even of the very existence of some races. The data of the great race called the Aryan, the father of all European peoples and literatures, is thus guessed out from its etymologic rags and tatters that have come down to our modern languages. The Aryan was a "dolichocephalic blonde" and his house was circular, roofed with clay,

only late supplied with windows, the walls made of twigs; no bricks or stone were used. Our Aryan forefathers were rovers, and their wagon-wheels were of one piece, without spokes or fel-loes. Cattle-rearing was a chief occupation, although they had no domesticated hens, ducks, or geese. Their clothing was originally composed of hides and pigskins, but later they learned how to plait, weave, and spin wool and flax, and they fastened the blanket at the left shoulder, similar to the toga of the Romans. Of course they were flesh-eaters and did not always cook their meat. Wild fruits and cereals were also common articles of diet, also milk—at least cream and whey. They probably knew nothing of cheese. Mead and honey were in use, but not wine. Strangers and enemies were at first one, as is likely to be the case with primitive peoples, although hospitality in time became a duty. They were an inland people unacquainted with the sea. A picture of the Swiss lake-dwellers, and a glance in our museums at the articles found beneath these houses on piles over shallow water, give us a pretty good conception of them. It is further suggested that at first the wife was obtained by capture (later by purchase) and that she merged her individuality in that of her husband's family, disproving the matriarchal theory as applied to the Aryans—indeed the wife was almost a chattel. Time was measured, the month by nights, and the year by lunar months; the hardships of winter and of night were deeply impressed upon the imagination, a glimpse of which is given in our own words *fortnight and sennight*. Where they lived, what was their religion, how they migrated and fathered us, these and many such things are also intimated in the word-stems they have handed down to us.

Taking our words as we find them and going back step by step in their history, we learn that like the spirit which begets them they are constantly undergoing change. A new subtle meaning is always being put into them and they lose their old significances with a silent and secret elusiveness. When we collate them after a century or two they are like antiquated photo-

graphs, and from still farther dates and countries they are strangely exotic. Psychic revolutions and social histories are thus focussed in them.

There are, for example, words now applied only to women which were once predicated of both men and women. This can signify only that women monopolized the qualities thereby expressed, and that the men unlearned them, so that they became ludicrous as male characteristics. How much longer we may call a man a *flirt* is a question. The word is evidently going the way of

Coquet, which was once as much a male as a female virtue. Women will find it difficult to prove, at least etymologically, that they have not trifled with love more than men have.

Hag was once applied to men also. It perhaps tells a sad tale of the cruelty to old women, who were forced out of the town, lived in the bushes, became more hated by their methods of "getting even," their superstitions, and those of their cruel fellows.

Witch. Piers Ploughman, and even Beaumont and Fletcher, still applied this word to men, but women evidently monopolized the business of the wizard, soothsayer, or wiseacre and so became by still later degradation the only witches.

Termagant was once applied to men as well as women. It might appear ungracious to press this matter before ladies!

Man, strange as it may seem, was once applied to woman. Its significance at that time seems to have been "the thinking animal." Was it woman's fault or man's egotism that thoughtfulness was claimed as his attribute alone? Either horn of the dilemma it is not safe to seize.

Girl was applied by Piers Ploughman to both sexes. Does the fact tell of the indiscriminating age when the child was "it," an age, I believe, not wholly past?

Hoyden was spoken of both boys and girls. The seriousness of life made the boys, alas, scorn the playfulness which girls might still longer exhibit.

Hussy. To be done with discourtesies, we may note the sorry glimpse into domestic infelicity given by the transformation of *housewife* into hussy; and of

Gossip, which has a peculiarly distressing history. It meant once, Skeat tells us, god-sib, *i. e.*, related in God, by the sponsor in baptism, who, alas, became a crony and tale-bearer of scandal.

Nobody ever pays any attention to dead words, and yet there are thousands in every language, coffined, begrav'd, and epitaphed in lexicons old and new, pathetic in their uselessness, awkwardness, and denied immortality. They are simply the only records left of myriads of the failed experiments of mind with life. They have real and many ghosts. Skeat has gathered and classified a type of words he calls "Ghost-words." But the name is inappropriate because they never had a ghost—they were never even born. The doctors would call them examples of pseudocyesis. They are words imagined, or the result of blunders of copyists, printers, etc. I have lately come upon one which may illustrate and serve as an addition to the list. An amanuensis of an old lexicographer took down the dictation of *concurro*, and without awaiting the definition hastily jumped at the meaning with an interjected question: "Concur, I suppose?" The disgusted etymologist pettishly jerked out, "Condog, rather!" and down went the synonym, so that *condog* may be found in some old word books as a grave synonym of *concur*.

Just as a person, a family, or a race, may degenerate or rise, weaken or grow strong, change occupation and character—so it is with words. Not only are there dead words, but there are thousands of old and dying ones, also demonstrating failures and lived-up usefulness, or fruitless wastes of mistake and misguidance. The teratology of philology awaits its scientist and historiographer. There are tramp-words, criminal words, pathologic words; insane, idiotic, and paralytic words. I do not mean words or argot used by these classes of people, that is another affair; but words that bear the same relation to language as these sick, vicious, and crippled people do to society. All of which is but a corollary of the law that *ψυχή* lies behind and causes *φύσις*, or that physiology is mothered by psychology.

I can not forbear mentioning a few examples of degeneration

and of ennobling. Of the latter class there are but few; and how this fact fixes the attention and how it tallies with the lives of families and of nations!

Emulation, by Shakespere and older writers meant envy. There was energy and aspiration in the people who made it mean what it now means.

Companion. The value of friendship is nobly attested, even under adverse circumstances, by the change in signification from that of a *low fellow*.

Spinster. Women, as is usual and right, come by their own and proved their quality by transforming the meaning of this word which once denoted a woman of evil life. The same truth is found in

Feminine, now signifying womanly, which once, at best, meant only womanish.

Liberal, once signified unscrupulous. Englishmen learned that liberality may be separated from chicane and deceit, just as with

Generous they proved that the common people, not only those of noble birth, could be unselfish and magnanimous.

Popularity, it is feared, may be in present danger of a reversion to its older meaning of courting applause. It had risen to better uses, but if the people love bad traits and demagogic popularity, we shall be as badly off as in predemocratic days.

Enthusiasm. "Our ancestors," says Leslie Stephen, "understood by enthusiasm the state of mind of the fanatical sects of the Commonwealth, or of the 'French Prophets' of the eighteenth century. An enthusiast meant a believer in sham inspiration. The gradual change of the word to a complimentary meaning marks the familiar change which was also shown by the development of sentimentalism in literature."

Respectable. "Chesterfield speaks of the hour of death as 'at least a very respectable one,' and Hannah More thinks a roomful of portraits of admirals 'a respectable sight.'"

Imp, or **Brat**, once meant simply a child. It is sad to think that the loveliness of children should be either so misconceived or so nonexistent as to bring shame and contempt into the terms.

Idiot was once used only of a private person, one not interested in public or state affairs; then of an uneducated simple minded

person; then of an ignorant and selfish one, and so on. How few were the interests of people, how fatefully dominant the affairs of the government, while the Greek *ἰδιωτης* was becoming the English *idiot*!

Base. In the same way, what pride filled the hearts of the maligners, and how spiritless were the silent poor while this word passed from *humble* to its present degradation.

Slave. Before Slavs were slaves, *slave* meant *glorious*.

Disease once signified discomfort only, and by

Misery was understood *avarice*. The logic is as plain today.

Knave once denoted simply a servant, or boy, like the present *Knabe*.

Were they knavish or were the masters supercilious and neglectful? The same question applies as to

Varlet, which was once the title of a groom.

Libertine, even in Shakespere's time meant nothing more than a free-thinker. It is very probable that libertines used free-thinking as an excuse for libertinage, and also that the self-righteous applied the term with egotistic indiscrimination.

Misceant, once simply an *unbeliever*, shows also the *odium theologicum*, rather than that unbelievers were miscreants; just as an

Infidel need not be a heathen or atheist to be *untrustworthy*.

Cupidity is noteworthy for its remarkable transformation, as it is, of course, derived from *cupid*, who is supposed to laugh at avarice and covetousness. The Latin *cupere* meant simply to desire. That the engrossing object of desire becomes money is plain enough in the present-day character of Cupid contrasted with our definition of cupidity. Of an avaricious man by the name of Love, a mot-maker said "Cupid is the God of love, but cupidity is Love's God."

Sensual, Bacon properly applied to all the senses. The engrossing domination of one sense is shown in the present limitation. The same may be said of

Lust, which Bishop Hall thought of as *eager desire* of any kind.

Egregious. Milton's use was simply that of *remarkable*; ours is *remarkably bad*.

Silly, once meant *timely*, then *innocent*, then *simple* or *foolish*. On German tombstones one will today find it to signify *blessed* or *beloved*.

There are hundreds of words with most noteworthy origins or histories, in which interesting and startling lessons are taught. *Assassin*, e.g., tells us of that astounding "Old Man of the Mountains," who defied governments, and created an army of death-dispensing and death-loving slaves by means of opium narcosis, a mimic paradise, and assassination. The pawnbroker's three balls tell us of the pills of the medical or Medici family, while still physicians, before they became bankers. The barber's pole is a whole chapter in the history of surgery. What a glimpse into history with its roads, caravans, etc., lies in the word *trade*, the *path trodden*!

Many such words could be listed by the pagefuls and illustrate the sad truth that men are quick to see evil and misrepresent good. One needs to go over such lists alone, pondering, and tracing out the subtle mutations, the numerous sidepaths of alluring, if frequently of mournful suggestion. There is no novel so dramatic and interesting as Skeat's etymologic dictionary.

Many words in present use "may be caught in the very act" of debasement. Only one may be cited. We English are nearing the danger-line in the word *sentiment*. A man would prefer to be spoken of as having a good character rather than as a man of good feeling, although it was only a little while ago that he would be more highly honored by the title of a *man of feeling*. It is a doubtful compliment to call him a man of sentiment, but any of us would deny that we are ever sentimental; while to call a man a sentimentalist would be positively insulting. We smile derisively at Continental men kissing each other. The histories of words are often the degree-marks of the thermometer of national emotions, and so of national character. The disgusting liar Mercier cried out to Labori, "Our military justice is not the same as yours," and good men thank God for the truth spoken by the stupid blunderer, a truth very different from that meant by him, when he sought to introduce the definition of honor as dishonor, and to define justice by the word injustice.

Fortunately, words as well as national character change somewhat slowly; at least it takes more than a generation of soldiers utterly to reverse the significance of the noblest of words.

The comforting result which we English will come to is that though the debasement of words is common enough with us, it is **less so than with other people**. Virility, dignity, and honor, without undue self-flattery be it said, are Anglosaxon birthrights, and though they may lead to prides, egotisms, and overstrengths, they serve to put soul and self-possession into words, and to prevent good ones from growing weak and morbid. The essence of the matter is by means of changes in word-formation and word-meanings to observe the psychic histories of the peoples of which the words are merely the pointers and relics. To a biologist the charm of etymology and philology is psychological. We get nearer the subtle and elusive reality of spirit through words and language than in any other way, and when the psychologist is doubled by the historian we shall have something worthy of the name of a philosophy of history.

But the phonologist must be a musician! Because only through an adequate realization of the function, power and art of music and a fusion of its science and art with that of linguistics, shall we have a genuine comprehension of the history and meaning of word-formation and language-making. In a general way the same laws underlie both music and etymology, and in a large yet clear sense, progress in the one is bound up with or analogous to that of the other. Take as a single illustrative fact the simple truth that half of the art of singing consists in getting singers to open their mouths and to make pure vowel tones. To this vowelization of music there is an exact phonologic analog in what one may designate the vowelization of language. Does the unconscious, with the added conscious art-spirit of a people find expression only in buildings, painting, sculpture, dress, poetry, and music? And not in the first and most direct, most immaterial, ever living product of the spirit—language? The question is its own absurd answer, but in the

science of philology the fact seems hardly to have been suspected. I have looked in vain among the official philologists for any statement of a fact which appears to me far more primal and fundamental than Grimm's Law or Verner's Law—the fact that the more barbaric a language, the nearer its speakers are to the animal, the more are vowel sounds strangled in the pharynx, and hawked, clicked, clucked, coughed, or buzzed forth. The progress toward civilization is accurately gauged by the progress in vowelization, and in extinguishing the function of the pharynx as a checker or modifier of sound in the production of words. There is not a truer or more accurate gauge of the actual or possible civilization of a race than this fact. Grimm was a German who used the word *Ich* a hundred times a day and surely several times every *Nacht* and every *Woch*, and yet he began his law with a consideration of the progress forward, from the back of the tongue, of the gutturals, to the dentals and to the labials—i.e., only of the mutes or stops—ignoring the first journey from the pharynx and root of the tongue to the middle and front of the mouth. This seems unaccountable. In English we have wisely utterly stopped all these *Ich*, *Nacht*, and *Woch* throaty abominations, just as the Germans, high or low, had previously discarded numerous indescribable glottal buzzes, pharyngeal clucks, gurgles, coughs, and hawkings, of peoples “pawing to get their hinder parts free” from animalian progenitors, and vainly trying to swallow, vomit, or hawk out their makeshift of language from pharyngeal or esophageal depths.

The significance of Grimm's law is that, although he began in the middle of the process, and not at its beginning as he should have done, when he did catch sight of it the progress of phonation consisted in the least possible interruption of pure tone, and that progressively by parts of the mouth more and more towards the front—i.e., the point of the tongue, the front teeth and the lips. Some modifications and checkings and stoppings of vowel-sounds there must be because the continuous tones are insufficient for the creation of the large number of sounds and words

required in thought-expression. But English, *par excellence*, proves that the modifications by the pharynx and root of the tongue are not only unnecessary but are artistically abominable.

Parenthetically, I may note two morbid variations, or two *impasses*, which English phonologic evolution and good sense have avoided, and we may therefore believe that in the progress of civilized phonology, these bad experiments will never be repeated. The French never do anything that they do not overdo it, and hence their language evolution illustrates the psychic law most patly. In the progress of vowel-modification from the throat forward, the French first snuffed a part of their language from the pharynx up into their nose *via* the postnasal and nasal passages. These parts in normal beings, animal or human, are designed and used for breathing, but the Frenchman characteristically knew better and he learned to blow half of his words out of his nose. The other half he bites, spits, or kisses off in a petulant, superficial and dilettante way from the teeth and lips. His egotism and superficiality have made him enslave and tyrannize over almost every pure vowel-sound, and his language at best is a lifeless, fragile, crystalline toy, not a vital organism.

The umlauts and *W* sound of the Germans, also have lessons for us. They are extremes of lip-modifications, but are too clumsy and indicative of too much good will rather than malicious, morbid, conceited, or selfish. It is not pretty, this rolling and sphinctering of over-mobile lips to say *oel*, *wir*, *wo*, *ueber*, etc., but the vowel-sounds are not stopped, or smelled, or twanged, or spat out.

Besides the foregoing, there are many facts urging the conception that the character of a people and of its language is almost identical. Hold to the thought that a language is the racial soul expressing itself, is character talking, and no other conclusion is possible. Is the German not as awkward, plebeian, harsh, vital, guttural, adaptive, profound, as his language? Does not the Spaniard promise as much and perform as little as his speech?

Is he not as cruel, orotund, verbose, pompous, good-mannered? Are French people not as selfish, hypocritical, tyrannous, pretty, superficial, reckless, logical, and moralless, as their tongue? And English—how perfectly it answers the common sense, the vigor, the dignified, concentrated, absolute and accurate self-possession of its speakers! When Byron preferred the soft “bastard Latin” to the native tongue he affected to stigmatize he told a good deal more than he was conscious of. We must remember it was Byron who spoke, and his term *bastard* was and remains most apropos. Bastards are prone to procreate bastards. A language may have a bad ancestry, and may be too liquid and too watery, as may a people; witness the Italy of today. The admirable restraint, the marvelous conservatism, whereby the English language and English people have preserved a rugged virility, solid bones and upright backbones beneath vigorous muscles, is solely the reason of England’s greatness, present and to come—is the reason we had a Shakespere and a Cromwell; it is also the reason for what all admit, that this language, simple yet herculean, limpid yet on occasion glacial, is destined to become the language of the entire world of men.

What a suggestive and revelatory fact is the unique monosyllabic character of English. Latin has been praised for its conciseness, but take the common names of the human body, those things that are nearest and dearest to a man’s self, his senses, his family, his domestic animals, and the most important natural things among which he lives and with which he works; compare them with the words for these things in Latin:—

ENGLISH.	LATIN.	ENGLISH.	LATIN.
Head	Caput.	Hand	Manus
Skull	Cranium.	Thumb	Pollex.
Face	Facies.	Hip	Coxa.
Hair	Crinis.	Knee	Genu.
Ear	Auris.	Skin	Cutis.
Tongue	Lingua.	Throat	Guttur.
Cheek	Gena.	Back	Dorsum.

ENGLISH.	LATIN.	ENGLISH.	LATIN.
Scalp	Pericranium.	Wrist	Carpus.
Brain	Cerebrum.	Arm	Lacertus.
Eye	Oculus.	Finger	Digitus.
Nose	Nasus.	Nail	Unguis.
Lip	Labrum.	Toe	Digitus pedis
Chin	Mentum.	Thigh	Femur.
Neck	Cervix.	Shin	Tibia.
Breast	Pectus.	Heel	Calcaneum.
Lungs	Pulmo.	Blood	Sanguis.
Heart	Cor.	Nerve	Nervus.
Sight	Visus.	Vein	Vena.
Hearing	Auditus.	Pain	Poenā.
Touch	Tactus.	Dog	Canis.
Smell	Olfactus.	Rat	Sorex.
Taste	Gustus.	Cow	Vacca.
Lame	Claudus.	Hen	Gallina.
Blind	Caecus.	Goose	Anser.
Deaf	Surdus.	Cat	Felis.
Dumb	Mutus.	Horse	Equus.
Sick	Morbidus.	Pig	Porcus.
Fire	Ignis.	Duck	Anas.
Air	Aër.	Bull	Taurus.
Water	Aqua.	Earth	Terra.
Rain	Pluvia.	Clouds	Nubes.
Storm	Procella.	Hail	Grando.
Thaw	Glacii Solutio.	Frost	Gelu.
Heat	Fervor.	Wind	Ventus.
Cold	Frigus.	Work	Labor.

Here are seventy words, all but three of which are of one syllable. To express these most used of all words the Romans had to enunciate one hundred and sixty-six syllables. This is a convincing proof of the compactness and decisiveness of the Englishman's character, not unallied with his taciturnity; his control of territory seventy-seven times as extensive as the home farm, and a foreign investment of twenty-five thousand million dollars.

I do not know if others have noticed one method whereby this shortening of our language is proved to be an active process today: the tendency despite logic and repugnance to throw accents back from penult to antepenult, and even to the fourth, sometimes to the fifth syllable. We no longer say *re-ven'-ue*, etc., and in many such words as *for'mid a-ble* the trend is obvious. In compound words the accent is thrown back half-a-dozen syllables. The one striking result is to make us disregard and even scorn the ending syllables, and finally to lop them off entirely, as in *domestical*, and a thousand similar words. We shall be soon saying *scientific*, instead of *scientifical*, and *scientificly*, instead of *scientifically*.

Progress in the English language and in the English civilization have gone on step by step, ever united and ever interacting, since English history began. Traces of the banal Teutonic throatiness of vocalization, of a noncomprehension of I, still stick in the untutored Scotchman's pharynx, but as the Englishman's virility and self-consciousness strengthened, he rid himself of all of them. As the national consciousness grew, the national language also freed itself from tyranny, and the vowelization became more free. The whole history of England is epitomized in the history of those most important and significant of all words, the pronouns, and is focalized in the story of the commander of them all, the grandest word of English, or of any language, the freed, dignified, splendid I. *Magna Charta* could never have been forced from kings or aristocrats by people who swallowed their *ego*, hissed their *ich*, or choked or hiccupped with their *ik*; it came only to men conscious of their own ability and valor and who expressed these qualities by the glorious English I, rolled forth with purity, self-control, and self-consciousness. That word is the revelation of the ideal of all history, the promise too of civilizing evolution.

The animal or the savage man moved by pain, desire, joy, or any one of hundreds of emotions, expresses these by sounds which are recognized as more or less appropriate or indicative; they

objectify the soul, as it were. The sounds of inanimate nature are anthropomorphically construed by the poetic imagination as suggestive of similar psychic movements and conditions. How far we judge correctly of them, or how much, for example, we read into the songs and calls of birds our own moods and phonologic habits, are questions as doubtful as they are interesting. But more or less accurately interpreted we have gone on until there is in the mind of every sensitive and cultivated person a considerable unity of result as to the significance of musical sounds and of music. The vocal or instrumental repetition of sounds similar to those of a groan, a roar of defiance, a shriek, the "come to me" of the woodthrush, or the susurrus of an evening zephyr, induce in us emotions, faint or strong, according to our sensitiveness, like those aroused by the original sounds in the original circumstances. The mind in one of its most constant phases thus becomes itself a musical instrument, upon which life plays the thousand tunes and symphonies of daily joys and sorrows. But the mind is the listener also, as well as the player, and sits silent behind the instrument, to learn how others feel and what they think; the player also as well as the listener, to tell the others how it is with this one soul. That in music there is this more or less accurate interchange and perfect interpretation, every one will admit.

My thesis is that in linguistics, and especially in phonology, in language *quâ* language, there is a correspondence hitherto unrecognized, almost an identity, with the musical fact of psychic expression, and with musical significance, interpretation, and progress. In the language itself, and not only in what the words mean, there is a reflex of the creating mind of the race. A language is a musical or an art product, and as surely as any other will tell of the character of the artist. That the artist is a million-fold personality instead of one individual does not change the law. A Gothic cathedral that required a peculiar people, myriad hands and a thousand years to create, speaks no more peculiarly and distinctively of the $\psi\chi$ of its builders than does a Gothic

language. Indeed, one may say the stones speak far less clearly and precisely, because the language is immaterial. I would believe that this truth extends to the veriest details, to the mutations of the forms of single words, and to the nuances of pronunciation themselves. Every dialect, every patois, especially our American Negro language, is incontestable proof of this, and no better could be desired than English pronouns. Pronouns are the most precious and most used of all words, and yet how late in evolution they arose in perfection. Even the child of the most cultivated parents naturally says, *Georgy* wants, *Boy* wants, before he says, *me want*, and this before he learns, *I want*. All our English pronouns are monosyllables and those nearest the personal life are the most perfectly vowelized; the one consciously designating the subjective life, *I*, being pure tone, and the next most honored, *you*, but little less pure, with the slightest added touch of modification in *we*. Notice that in no other Teutonic tongue is the representative of the conscious self a pure tone. We have *Ic*, *Ie*, *Ik*, *Ich*, *Ik*, *Jig*, *Jag*, *Ek*, but not *I*. All the "Laws" of all the philologists can not explain the fact except psychologically. Note also that our *I* refuses to be mangled and shunted into the next following word, as in many languages whose people love to be tyrannized over and are incapable of holding their *I* with dignity and freedom. The French, for example, elide the half, the vowel, too, of their *je*, and *me*, whenever opportunity offers, while we will do nothing of the kind. *I'm* for *I am*, is a poor colloquialism and we are ashamed to print it, and should be ashamed to say it.

Notice the fact also that the same growing sense of freedom of the English spirit has shaped its language with a perfectly analogous freedom. Never before was there a civilized language so absolutely grammarless. We have stopped the nonsense of case-endings, inflectional, syntactic, and terminologic puzzles, and have given our words a single form. To put that in biologic language, we have advanced from morphology to physiology, from form to spirit. The spirit is so free that we can make al-

most any noun into a verb, and any verb into a noun. "I first postaled him and then I wired him," said a man to me last week, "but I could get no wire from him." Viewing this wonderful dual march of English linguistic and English political freedom, how utterly silly the blindness, dogmatism, and materialism of "*Die Lautgesetze wirken blind, mit blinder Nothwendigkeit.*" Blindly indeed act the laws of phonetics to him who sees no racial or common Consciousness behind individual consciousness, no

"One far-off divine event
To which the whole creation moves."

CHAPTER XI.

STYLE.*

STYLE.—We are often asked how one may acquire a correct and cogent style of writing, and naturally and rightly every young writer wishes to know if this can be done. There are a few instances of persons, Cicero and Voltaire, for example, able to say a commonplace in a way to command attention, who had style apart from matter, but for the vast mass of writers this would be not only undesirable, but also dangerous. In the final analysis it must be confessed that as a rule style is not to be acquired by any amount of conscious study, because it ultimately depends upon a man's originality and the character, if one may so speak, of his mentality. According to Buffon's classic maxim, style is the man himself. The matter at last resolves itself into the old discussion as to form and content in art, and a judicial mind can have no tolerance for the sillies who argue that form is everything; for, according to that long-eared dictum, a painter could expend the technic acquired in a lifetime of industry in painting rotten eggs; or a poet could waste the utmost metric and linguistic skill in lilting elegancies and meaningless mellifluousness. Unless the poet think great thoughts and quiver with feeling his verses will never become poetry. In precisely the same way, the ability to write perspicuous and convincing prose will primarily and ultimately depend upon the mental energy, the clearness of thought, and the reality of emotion, of the writer.

But just as poetic sensibility must learn the art of poetic expression, just as the painter must learn drawing, color-blending,

* Chapter XI of *Suggestions to Medical Writers*, The Philadelphia Medical Publishing Company, 1900.

etc., so one who would best convey to another his experience and opinion by means of prose-writing and printing, must learn the necessary and intermediating art. For an art there is, although in acquiring it many a poor man, forgetful of *Le style c'est l'homme*, has lost his way in the labyrinths of dilettanteism. At least there are hundreds of mistakes and wrong ways that he may avoid by a little patient study. With much aptness it has been said that "a great commander must know how to pick his recruits, to drill them, and to handle them when drilled, but he must still have something more—generalship; and what generalship is in a commander, that clearness of thought and of expression is in a writer." He would indeed be a brave man who would attempt to teach the higher qualities of generalship or of literary mastery, but in the picking and drilling and handling, either of recruits or of words, much may be learned by those who have neither the ability nor the wish to become great generals or great writers.

We are attempting in these suggestions to writers to give a few hints of the worst things to be avoided, and of the best to be encouraged, but at last, to be sure, these have nothing to do with style, they only caution about some of the more striking blunders. They also need to be supplemented by the study and often the memorization of parts of a few manuals that any good bookseller can supply, such as Roget's *Thesaurus*, the *Stylebook of the Chicago Society of Proofreaders*, Hodgson's *Errors in the Use of English*, White's *Words and their Uses*, and his *Every-day English*, *The Verbalist*, and Cobbett's *English Grammar*, by Ayres, etc.

Nearly all physicians are under the obligation of giving to their profession the results of their experience. This can be done only by the written and the printed page. Deprived of leisure, engrossed with the facts and the work of life, frequently with insufficient literary training, physicians often betray an excusable but lamentable inability to write even correct English. Because of this fact conscientious editors grow prematurely

gray, and the files of the conscienceless sort are inexhaustible mines of fun for the jester and of irony for the cynic. It is when there exists no need for writing except the need of conjoined vanity and ignorance, doubled perhaps with the cunning of the advertiser, that we get things that give shame to gods and men and are fit to arouse the cacchinations of the imps of hell.

Some of the general rules for writing are as follows:

1. *Do not put pen to paper*, or at least do not set the typesetter at work, *unless you have something to tell* that will probably prove of value to the profession or to the science of medicine. Do not write to advertise yourself, or for vanity's sake.

2. *Think out in advance and clearly* what you wish to write; so far as you are able find what others have written on the subject; arrange the order or sequence of what you will say.

3. *Avoid exordiums*, introductions, and prefatory explanations, plunging at once *in medias res*, and striking out straight for your essential point with clear and strong strokes, and without detours or tiresome indirections.

4. *Use the fewest words possible to express the fact*.—The mistake of not doing so has been called perissology. The following example of needless amplification occurs in a special article by a distinguished neurologist in a leading metropolitan medical journal: "The anterior column of gray matter extends throughout the spinal cord, and the upper enlarged intracranial end of the spinal cord, which is known as the oblong cord or medulla (medulla oblongata)." The information contained in these 32 words might have been given in 15.

5. *Avoid highfalutin*.—The employment of bombastic, lengthy or ponderous terms, when briefer would suffice, is not an uncommon literary sin. This is simply one form of what may be illustratively called anatomic esotery. Now that the choice is offered, the anatomist who deliberately says, *e. g.*, *aponeurosis* for fascia, *anfractuosity* for fissure, and *convolution* for gyre, thereby arrays himself with the village orator, in whose turgid discourse a fire is always a conflagration. Choose simple words

arranged in short though not in choppy and staccato sentences. Profound interest in what you have to say, singleness of desire to give to others what you have learned, will make you write better English than all the grammars and rhetorics ever compiled.

6. *Stop when done*.—If you have not made the matter clear you will only befog it by explanations and variations. Go back rather and rewrite what you have said. Have no perorations, or long-drawn “clap-trap fortissimos in g,” like an opera singer hungry for applause.

USING FINE TOOLS WITHOUT HAVING LEARNED THE TRADE.—A most interesting volume might be compiled of the humorous blunders made by writers in the use of a language they do not understand. “Translators, traitors” (*Traduttori traditori*), is an old saw, to be exemplified, probably, while there are two languages left in the world. *La dernière chemise de l’amour*, for *Love’s last shift*; *La Perruque Indépendante*, for *The Independent Whig*; *God defends adultery* for *Dieu défend l’adultère*; *Great is truth, and it will prevail a bit*, for *Magna est veritas et prevalabit*, etc., are well-known instances. There is an Arabic translation of the Bible which translates “Judge not, that ye be not judged,” by, *Be not just to others, lest others should be just to you*, and the traitorousness of our own English translators is illustrated by the fact that in the original of Job the words, *Oh that mine adversary had written a book*, are (a’as, that it is so!) badly misrepresented by the King James’ version. The mis-translation of *tellurische Magnetismus*, as the *magnetic qualities of tellurium*, it is said, made an eminent chemist much trouble in testing tellurium for the magnetism. Every literary physician could probably add a dozen words to Skeats’ list of ghost-words.

This bastard imperialism of ours is on the road to the production of a bastard English, and among the first offerings in proof we are glad to give our readers today an instance from medicine not without instructiveness in a number of phases. There lies before us a pamphlet entitled, *Extrat of my Original*

Work of the Grease in Yellow Fever Urine, by a physician of one of our 1200 newly-acquired islands. We copy verbatim:

Afterwards the war, now in the peace, when Cuba nid to go rpsidly to arrive the 15 or 20 million of white men, that she can support; and the agriculture go to reach the place that she deserv, and owe to be, in this richer ground. I think it is necessary, to open all the door to all the men of good will.

They are in Cuba two dangerous illnes, the malaria fever, and the yellow fever. We know that the padudic manifestación is owe to one protozoos, that is an ameba that had flagelas in number of one to four for each one; that tad not envelop of quitinous substance, that tad a voluminous nucleus, that can be see when we add acetic acid; the membrane that envelop the amebe is rich in albumen, and in another substance vegetable, insomerum of the vegetable filotum, the flagelas had not in its end cupping glass.

The form of the paludic ameba is spherical when it is big and strong, its reproduces by gems and by segmentation, they lives in the waters richer in organic vegetables substances and in alkaline medium, we can make by this way artificial and sterile swampy, with ten part of boullon alkaline for 100 part of sterile water.

They don't not belong to the gregarinas, nor to the coccideus, they are not gregarinas because they have not quitinous in its composition, and they are not coccideus, because they have not its ovular phase. They are not simple ameba because they have flagelas and nucleus.

Its breathing and its circulation is owe to the capillarity and osmosis laws, its food itself by a hole. The writters have present to the Academy of medicine in this town, several cases belong to the reconcentrados, thad had present the two forms of beri-beri illness, the atrophic and the swell forms. I have proved their that beri-beri, is the product of famish and paludic intoxication The blood of all they for famish was-analyze by me, all have had the paludic ameba.

For me the paludic access, is the result of the fight between two amebas, the leucosyts, this probó ameba in the normal blood and the paludic ameba; ours owe as a doctor is to aid the leucosyts, so that its can win the paludic ameba. Both the leucocyts and the plasmodic has the same composición, life, etc.

In yellow fever we all think that they are one germs in its cause, but

ours means of dye and of culture can not put out at our sight it.—Freire's cocus, Finlay's tetrageneus, Gibiei's cormogenous, Stenberg's X and sanarelli, bacillus, has not full us, as the cause of yellow fever.—The histological works of this illness is make much times ago. The clinical study is all in yellow fever. Dr. Laine Mayor of Sanity of the American Army has address one questionnaire to the Doctors in Havana, one of the cusion put their was that.—Are their one symptom that can be pathologilical in yellow fever? Yes sir can I ausuer and in the urine you can always faind it; it is the grease, you know perfectly well that yellow faver has a quickly evolution in 3 or 4 days; the fever and all the symptoms fall down and the infection of the body has finish.—The terminical periodic begin and by the urine you can make by surefy yours diagnosis, by the methodical examination of the urine you can see in it the fatness degeneracy of the kidney, and say suretly the prognostic.

That is the pathological symptoms in yellow fever and you can see it always in the urine. It is certainly that the kidney is the entrails more affect The apparition of grease in the urine, that I am the first in see and saying, show clear the fatness process that is characteristical in yellow fever always urine is acid in yelloow fever. And the colour is in direct relation with the serious of the case. Yellow fever is one serious infection, that every one can take by the water, or by breathing in contagious atmosphere, its evolution is in 3 or 4 day and give immunity, afterwards of the remition of all the symptoms, the last periodic beginning and it can finished by two modes by cure or by death: in the urine you can by the microscopical examination follow the illness and make a certainly prognostic.

In proof of this I am going to refer you two case, one is cure, the other is death,—Both taking bed in Angeles Hospital, in the 5 days of its illness afterwards of the characteristics remission. Both have had the same thermometer and pulse curve line, one of they have and incoercibles vomit, insomnious near 48 hours and cure hersself; the other one rest quiet in his bed and only have had furious delirium a few hours before his death. The frist one, that is to say that, that cure had not jaundice; the other one that, that dead have had a pronounce jaundice.

Let us see now the urine, that of the woman, had a yellow colour, reacción acid, specific weig h, 1,018 Albumin enough, at the microscope a great deal of grease and also epitelic cellule in fatness degeneracy leucosity, kidney cellule and kidney cylinder, in fatness degeneracy

In the man the urine had one brown yellow, reaction acid, albumen 3 grames by 1.000, á great deal of pigment and bile acid. By the microscope you can see a great deal of kidney cellule in fatness degeneracy. The analysis of the irune show us the march of the kidney fatness degeneracy: in the woman we can see the restitution ad integrum of the kidney tissue, till the point to desappear all abnormal in the nrine an she leave the hospital in the ten days of ters illnes, because she was cure. The examinattion of the urine in the man let see that the dead is the natural end of the fatness degenerancy that go in increase every day. In 120 grames of urine obtain by the sound, afterwards of 24 hours of anurie. I have faund so great deal of kidney cellule that I doubt very much that one can faind more that in this nefritis parenquimatous acute, afterwards of this the pacient had been taken by a complete anurie. This urine greasy belong ouly to the yellow fever. Yellow fever-Histologie We have make the following, post mortem examination.

Frist case belong to one spanish man-Corujosegoud case belong to one spanish man-Quintela Third case belong to one American man Henry Smith. Fonr cases, has not deads of yellow fever. Patrick Smith.—For proves the grease we have put the histological cuts of the liver and kidney into the accion of osmic acid 1 by 100, and to Marchi method that showing very well the fatness degenerancy because its dyers the grease in black colonrs. In Patrick Smith case the reaction of the grease, have not had place notwithstanding that the entrails cuts has put into osmic acid solution for 4 hours.

In the liver of the 3 first case we can see the degenerancy and infiltration of the grease in all the organ, the livers cellules was full of grease and the same happen in the intercellular espace. In Patrick Smith case his liver have not farness degeneracy, but he had very much melanich pigment. Patrick Smith have not lesions in Peyer's plates and his blood examination before of deads by Coronado and Kramer have show us the Leveran's plasmodie, we can affirm that he death of a paludic fever, and have not give his blood the Widal's serum reaction I am going now to refer the lesión of the kinneys we have observe two state, the first congestion, that can go to the apoplexy of the glomerul; and in last and second state the fatness degeneracy that can be following by the destruction of the kidney parenquima, we see also the hemorrhage focus, that go to transform in purulent abscess, and the necrosis of the Malpigio glomerul. We cannot see this lesson in Patrìck Smith case.

As you can see the first organ that in yellow fever put out first the fatness degeneracy is the kidney since the first day the urine accuse mucine, sence the second & third days the albumen appear and the grease como sooner and vacillate like the illness fluctuate, and by the microscopice examination we can make snrely the diagnossis and the pronostic, and follow the kidney destruction by the fatness process day by day and steps by steps. In the five day of the illness jaundice appear and the pace of the bile by the kidney filter add more elements to the destruction of the cellules of this orgam, that had been before lessioned.—The bacterioogic is for making in yellow fever we have employeed Sanarellay's method and we have faund the baccillus in case that dont not belong to yellow fever and in truly case of yellow fever we have not been able in faind it.

I think that I can now affirm that we possess now one sing that always we can faind in yellow fever urine, that is the grease, that put out the general degenerancy by the grease in yellow fever, and that I am first to speak and to make appear.

—————'s originales works.

1°. Is the drarrhoa with our withot fever the porter and propagator of the contagion?

2°. Is beri-ber iilness the result of famish and paludic intoxication?

3°. Hysterical grils.

4°. Phisiological destrut produce by the first evolution of teeth.

5°. Antidiferic serum in the serious ulceration y mauth.

6°. One case of esphalum of the feet and anurie belong to one boy of the reconcentrado that have beri-beri.

7°. Diarrhoa of blood in the childhood.

8°. One case of Pott illness, cure.

9°. Paludic (marshy) dispeptic.

10. Biology of Laveran's parasite.

11. Is the marshy (paludic) accее the result of fight between two amebas, and is the leucosity [the white globul of blood] one ameba?

12. Is phosphoirc loss the consequence of the destruction of the organism?

13. Differential diagnossis between yellow fever and bilious malaria fever.

14. Clinical, histoligical and bacteriollogical diagnossis in yellow fever.

15. The grease in yellow fever urine.
 16. The yellow fever germs.
 17. It is enough only see in blood serum the mee melanic pigment for making the diagnossis of malaria.
- All this works has been read at the Academy of Medicine in Havana city.

We should in justice to the author add that a full page of errata is appended, in which we are told for *protologilical*, read *protological*, for *ausuer* read *answer*, for *weih h*, read *weight*, for *jatuess*, read *jatnes*, for *seguod*, read *second*, for *drarrhoa*, read *drarrhæa*, for *destrut*, read *destrub*, etc.

We have not the remotest desire to raise a smile at the expense of our serious-minded coworker, but only to illustrate several valuable lessons or psychologic laws. We can use our own native tongue so grotesquely as to traduce our meaning, and unconsciously tell a sorry tale of our past history and present ideals. But when we try to use a foreign language we must be doubly on our guard. The troubles of our author with his -als, and -icals, *terminical*, *bacteriollogical*, *protologilical*, etc., will bring him the tear of sympathy of the sticklers for all the -als. There are printed every week millions of pages of quack medical literature, as sincere, innocent, and bunglesome as this letter. As much more is printed in which the ignorance is spurred, not by egotism, but by grocer's bills. For example, why should a self-styled scientist have the recklessness to print the nonsense that one set of nerves transmits faradic electricity, another galvanic electricity? Scientific medical knowledge is also at last itself only a tool, and when vanity or ignorance uses this tool that an accident may have put into its inexperienced hands, the result is not mirth-provoking pseudo-Spanish-English, but may be the health and life of patients. Fine tools (and what finer or more marvelous instrument is there than language and science?) should not be used by clumsy hands and unskilled brains without some least attempt having been made to learn

the rudiments of the technic. As well pretend to be a bacteriologist without ever having peeped through a microscope.

STRABISMIC CONSTRUCTION.—By this term we mean the fact that words are so misplaced in a sentence or so badly chosen that they either fail to convey the meaning intended, or positively mean the reverse of that desired. They do not tell the story exactly. The Associated Press despatches from Europe should be properly worded, because of the gravity of the news transmitted so far and by such an expensive method as the cable, and yet in the report of the Dreyfus trial the prisoner was asked if at one time he was possessed of certain information. The reply was thus translated: *I only had incomplete information.* By these words we are undoubtedly to understand that it was only incomplete information that he had, whereas the words themselves tell us that the speaker was the only person who had incomplete information. This word, *only*, and another, *alone*, are frequently out of place, and, according to the license of some writers, may walk about in a sentence quite unrestrained, or sit down wheresoever the whim may dictate, and often in the most incongruous place. But the exact writer may exclaim, "Me this unchartered freedom tires." Sometimes the two words are interchangeable, but, as a rule, each has its appropriate function and position. There is often a lurking contempt in expressions with *only*, especially if this word is misplaced. "He is only fitted for this" has a different meaning from "He only is fitted for this" (or "He alone is fitted for this"). It is a good plan to look at these words closely when we use them, and in general to keep them in contact with the words to which they refer. There are other and innumerable ways in which writers fail in accuracy through this *construction louche*, as the French call it. A frequent method is such indefiniteness in the use of *he*, *her*, *him*, *it*, *they*, etc., that the reader is unable to know to what the squinting pronouns refer. This has been caricatured a hundred times—the following examples not being much more ridiculous than many occurring in otherwise good

medical essays. This is said to have been the wording of a sign placed in the field of a much pestered person: "If any mans or womans cow or ox gets into this here corn his or her tail will be cut off as the case may be." And this is the copy of a genuine note: "Mr. A. presents his compliments to Mr. B. I have got a hat which is not his; if he have got a hat which is not yours, no doubt they are the missing one." Here is an instance in medical writing: "No one as yet had exhibited the structure of the human kidneys, Vesalius having only examined them in dogs." (To what does *them* refer?) *Which* is a word, too frequently used in any sense, but especially when it is popped down too far from the word to which it points—a result which has been called "the sin of whichcraft."

SENTENCES THAT SUFFER FROM SPASTIC PARAPLEGIA are altogether too common even in the writings of good thinkers and scientists. Let us choose the last sentence that we tried to make stand steadily on its feet:

"Examination with the endoscope has, in a number of cases, demonstrated that the inflammatory process, even after long duration, may not extend, and, in the majority of cases does not, deeper in this disease than to the mucous membrane, although, in some chronic cases, especially if following the history of stone, the muscular tissue, in some parts, and irregularly, may, more or less, be also implicated."

It is such sentences as this that drive editors to drink or to suicide. Shall one let them go, or endeavor to cure their sorry disease? One way for authors to correct this paraplegic syntax is to attempt to transpose the modifying, explanatory, and subordinate clauses, and to place them so that the reader's mind is not every second brought up with a jerk. One often feels as if he were being driven slowly over a bad corduroy road. So far as possible a good writer will enable his reader's attention to flow as uninterruptedly as possible, or with a slow rhythm that is very different from the "bumpetybump" of the foregoing citation. In the first place all sentences should be of a

length that between periods and semicolons they can be read aloud during a single expiration. Then, if we throw the qualifying and adjectival clauses in front we are able to get a flow, instead of spurts, of meaning. For example: "In a number of cases examination with the endoscope has demonstrated that the inflammatory process does not usually extend deeper than the mucous membrane. Under certain conditions, such as chronicity, or the history of stone, some portions of the muscular tissue may be more or less implicated."

LET US STOP THE USE OF THE SUBJUNCTIVE MOOD!—The extraordinary simplicity of construction of the English language, like every other product of civilization, has flowed naturally from qualities of mind in the originators. It has led to the designation of English as the grammarless language. However this may be, it is undoubtedly of all the languages of the world the freest from hard and fast grammatical formalism. Almost every adjective can be used unchanged as a noun, and almost every noun as an adjective, and there is the greatest liberty in the placings and functions of all words. These free and uncomplicated qualities have been and are potent factors in making English the world language it is certainly destined to become. But in its evolution, like every other organism, it must bear with its remnants and tags of old atrophied and useless organs, wholly or partially outgrown. Our wonderful but incurable spelling is one. Another is the subjunctive. We have turned it over to the poets and other dealers in the antique, but still, dilettantelike, one occasionally writes, *If the artery be not found, In case it be not so*, etc. It may be confidently said that in English the subjunctive is opposed to the genius of the language and of its speakers, that this subjunctive is rapidly becoming archaic, and the sooner it is entirely disused the better. We are active-minded people, will not submit, and so in grammar we have no passive voice. We are positive and indicative-mooded in our characters, and so we have, or are wisely hastening to have, no subjunctive. If one says (not, *if one say*) *if*, it is only a pass-

ing supposition, neutralized by *if it is so, if it is not so*, etc., in which all the doubtfulness necessary to be conveyed, all the contingency admissible, resides in the little supposition *if*, and is not incorporated in the very heart of the sentence, the verb. Let us abolish the use of the subjunctive!

BADLY CHOSEN WORDS.—It is somewhat dangerous to advise against the use of even the most foolishly chosen words, because no one can foresee with what illogicality Lord Demos may be pleased. If it suits his whim he will pick up the most arrantly nonsensical word and use it in the most whimsical way until even the aristocrats of linguistics are compelled to fall into the habit; the word thus becomes perfectly legitimized and “received into the best society.” But at worst one may in the meantime give his language strength and perspicuity by using the right words in the right places, or at least by avoiding their employment in the wrong places. We purpose listing a few of the words most frequently misused in medical literature:

Apt, instead of **liable**, **likely**, or **probably**. *Apt* refers to an inherent tendency, the having an aptitude, and should not be applied to conditions in which we mean likelihood or probability. “The tissues may be apt to heal,” but the leg is not “apt to be broken.”

Where, instead of **when**. If we mean a time-relation, it is manifestly absurd to use an adverb of place. Not *where*, but **when** the stomach is perforated, etc.

Where, instead of **in which**. *The case where* instead of *the case in which*.

Alike; two, or both things, can not be **alike**.

Couple, instead of **two**. Two things may be coupled, *i. e.*, bound together, but not necessarily or generally.

Get, instead of, or in addition to **have**. *Get* and *got*, commonly used, are superfluous.

Expect, for **think**, **suppose**, etc.

Observe, for **say**.

Notable, for **noteworthy**.

Reliable, for **trustworthy**.

Section, or *quarter*, instead of **place**, **country**, **neighborhood**, etc.

Witness, for **see**, is one of a hundred examples of newspaper English, or highfalutin.

Recuperate, instead of **recover**.

Extend an invitation, instead of **ask**, or **invite**.

Above and below, instead of **foregoing, following**. When printed, *above* may prove to be **below**, etc.

Bad cold, for **severe** cold.

Beside, instead of **besides**. The first means **by the side of**, the second **moreover, in addition to**, etc.

I do not doubt but that, for **I do not doubt that**.

Each other is said of two, **one another** of many.

Bad health, instead of **feeble**, or **delicate health**.

Had I have known, instead of **had I known**.

Ought to, instead of **should**—a very common error.

Healthy, for **wholesome**, or **healthful**. Exercise is healthful, food is wholesome, a person healthy.

In respect of } instead of **in respect to**.
In regard of }

Nicely for **well**. *I am nicely* has been called "the quintessence of popinjay vulgarity."

As far as } instead of **so far as**.
As soon as }

Whether or no, instead of **whether or not**.

No fewer than, instead of **not fewer than**.

No one of them, instead of **not one of them**.

I propose, for **I purpose**.

Previous to, instead of **previously to**.

Those who, instead of **they that**.

En passant, for **in passing**.

Avocation, for **vocation, calling, or business**.

Accident, instead of **wound or injury**. We have seen the expression "the accident was cured."

Once in a while, instead of **occasionally, sometimes**, etc.

Aetat, for **of age, old**, etc.

Can, instead of **may**, an irritating and common error. "The specimen can be seen in the laboratory," "the operation can be performed in the private room," and similar ones may be found in every page of medical writing.

Met with, instead of **met**, **found**, etc., is another exasperating expression, requiring the poor editor's blue pencil about 100 times a day. "Such accidents are often met with and the operator can expect," contains three most common errors. "Begin with," is analogous blundering.

Arrived at, instead of **reached**, **concluded**, etc. In "The following are the conclusions arrived at," the last two words are useless.

AS TO THE USE OF CERTAIN WORDS.—The world seems determined to use *where*, when often it really means and should use the words *in which* or *when*. It would be better to use the former word when it is a question of place, position, or location, and the last word when the indication of time is desired; and it is certainly better to speak of a case *in which* than a case *where*. There is a habit quite as inveterate of misusing the word *apt*, when one means *likely* or *liable*. The subservient dictionaries in chronicling the fact of this misuse seem to justify it. Indeed one can find warrant for almost any wrong usage in the word-books or in all but the few very best writers. When we wish to imply a *tendency* and mean *suitable*, *adapted*, *expert*, *inclined*, *prone*, etc., we may correctly use the word *apt*, but if we mean to express *probability*, *the result of a calculation of chances*, etc., other words are more proper. *Frequent* is often incorrectly used for *common*, and *vice versa*, and the same may be said of *since* and *as*. *That* serves the purpose in nine-tenths of the places wherein *who* and *which* are used, and as regards *among*, we would suggest *out of*, or simply *of*, as often better—e. g., *of 100 patients 20 were over 10 years of age*, etc. The *Richmond Journal of Practice* correctly urges the use of the term *surgical intervention*, instead of *surgical interference*. We should avoid the "split infinitive," i. e., the insertion of words between *to* and the infinitive, e. g., *to intelligently act*, *to thus operate*, etc. Some writers are overfond of the word *very*, and of *people* instead of *persons*. We think it bad taste for one to write *the author*, or *the writer*, when speaking of himself. It is the prudery of egotism. A great physician recently wrote concerning *phlebitis*

of the veins of the leg, and not seldom one will see such expressions as *osteitis of a bone*, *neuritis of a nerve*, etc. *Right side of the chest* seems preferable to *right chest*, *right heart*, etc., as applicable to mammals. As *pneumonia* is used to mean *inflammation of the lung*, it is redundant to speak of *pneumonia* of a given part of the lung. It is often possible to distinguish between *hemorrhage*, *thrombosis*, *embolism*, etc., when writing *apoplexy*. *Oviduct* is preferable to *jallopian tube*, and we could wish never again to meet the constantly recurring expression *met with*. Prepositions at the end of sentences are common with persons who wish to know "where they are at." *No* and *none* are singular, but are not rarely conjoined with improperly plural nouns and verbs. Too commonly the statement appears that "the secretions were negative," or "the examination was negative," when it is meant that the results of examination were negative. Let us not talk or write about *doing* operations, but of *performing* them.

CONCERNING LOGICAL ORDER IN COMPOSITION.—Many writers forget that there is a gain to be derived from the arrangement of the parts of their article in a logical order. One may not be able to make clear what logical order is in a general way, but in a special article its want may frequently be observed. In a sentence there is a strong and a weak method of placing the component words; in a paragraph there is one best manner of marshalling the sentences, and in the entire article there is one proper plan of ordering the paragraphs. One method will unfold the thought of information, making it easy for the reader to follow, and giving a cumulative and convincing effect to the whole. Whether the propositions summarizing an article are printed or not, it is advisable to make them, as thereby an inversion or failure in the logical concatenation may be detected.

"IMMUNE TO," "IMMUNE FROM," ETC.—We have been asked as to the proper preposition to use with *immune*; should it be *from*, *to*, or *against*? The original significance of the word

immunis was, *exempt from public service or charge*, the thought being one of a release from a common duty or obligation. In applying the term in a medical sense, the essential idea of exemption is preserved. It is a matter of indifference whether the condition is of natural or acquired (artificial) origin. Replace the word by its nearest synonym, *exempt*, and the preposition *from* is required.

THE BRYANT INDEX EXPURGATORIUS was a word blacklist devised by the poet-editor to try, by its aid, to withstand the onrush of philologic depravity, whereby the ignorant newspaper reporter and editor endeavored to hide their ignorance and some other qualities worse than ignorance. The newspaper men even of today still feel the sting of Bryant's irony and do not lose an opportunity to jibe at the failure (what they call failure) of the attempt to teach them some degree of literary manners, and they think because they are more numerous, more unabashed and powerful than they were in Bryant's day that their banalization of English is therefore correct and a great success, and that Bryant was a "failure." It would be just as true and as sensible to say that laws against theft and murder are failures because these crimes abound, or that boorishness is beautiful if the majority turn boors. The famous list was in large part made up of examples of highfalutin, and of that indescribable combination of bad slang, worse impertinence, and worst inaccuracy which can only be fittingly designated as newspaper English. Of this class of terms we might cite from the list of disapprovals: *Artiste*, for **artist**; *casket*, for **coffin**; *cortege*, for **procession**; *darkey*, for **negro**; *devouring element*, for **fire**; *gents*, for **gentlemen**; *inaugurate*, for **begin**; *lady*, for **wife**; *lengthy*, for **long**; *Mrs. Governor*, *Mrs. President*, etc.; *pants*, for **trousers**; *party* or *parties*, for **person**, **persons**; *state*, for **say**; *would seem*, for **seems**; *settle*, for **pay**; *locate*, for **settle**; *in our midst*, for **among us**. Such a list would include hundreds of similar terms if some later Bryant were to remake it today.

The newspaper man who sneers at "the Bryant Index" has a confused jumble of an idea in his head that the index failed because it sought to banish slang. This error arises from a natural and ineradicable inability on his part to distinguish between slang and the banal. The one is the lusty living brat of properly married intelligence and recklessness, the other the bastard of stupidity and vanity. Many slang words make excellent citizens when they grow up and find their place in the world's work; but the cant of idealess conceit never gets into better literary society than that of the "Knights of the Quill."

Bryant erred in including in his list some terms that were not inherently wrong or vulgar, and which needed only usage to make them proper and serviceable tools. The error is one that the "pernickety stickler" is very likely to make. It is a dangerous, even a fatal thing, this "art for art's sake"—the thinking more of how one says it than of the thing said. In English, too, it is peculiarly dangerous to prescribe or proscribe. It is, indeed, "a grammarless tongue," and of all languages it responds most sensitively to the shaping mind of its makers, who, in their vitalizing democracy, will not allow any habit of tool or of tool-using to hinder them from realizing their ideals.

THE SPLIT INFINITIVE.—At a recent medical meeting one speaker's scientific statements were criticised because in the very act of stating them he had committed the literary crime of the split infinitive. There is, indeed, a certain truth in the proposition that the correctness of a writer's language is an indication of the correctness of his science; because if a man is an accurate observer of facts and a logical reasoner concerning them, he will also naturally be a correct observer of the facts of words, their meanings and uses. Humbug and quackery and medical criminality, when expressing itself in print, create a new linguistic never before seen by gods or men. But this inference may be drawn too absolutely, and hard and fast logic is not often permissible as regards matters philologic, especially if of the English variety. The London *Academy* recently hit off

the split-infinitive sticklers in a delightful skit, of which we can spare space for the last paragraph only:

There was one critic who seemed rather tired, and him I took aside. "Does it really pain you all so very much?" I asked. He glanced round to see that he was not overheard: "Well, it is like this," he said, frankly, "suppose you have to criticise style. You may not know what style is, or you may not have time to look for it. So you just glance at the infinitives. If they are split, the man has no style; if they are not split, he has, and your work is all done without any trouble. That is what it seems to me to really amount to." All unconsciously he had committed the terrible offence: Everybody does.

This, of course, is a humorous exaggeration, designed to say that it is absurd to go daft over the matter. As a rule we agree that it is best to avoid throwing the adverb into the infinitive in this way, because generally it *weakens* the sentence, and by placing it elsewhere we can more accurately express what we wish. The last words of the foregoing sentence are, from one point of view, criticisable upon the same grounds as the split infinitive, and were written to bring out this point. "We can more accurately express," strikes us as less forceful than, "We can express what we wish with greater accuracy." Take the two sentences brought in as the best examples the *London Academy* chaffer can find: "We have agreed to unanimously think it wrong;" the critic hastily corrected himself and said, "We have agreed to think it unanimously wrong," thus making matters worse, of course. "We have unanimously agreed, etc.," was naturally omitted by the caricaturist. "This is what it seems to me to really amount to," is a poor justification. There are a dozen more happy ways of writing the sentence. Not alone with those who have occasionally used the split infinitive will the grammarian's purgatory be filled, and yet those who have sinned least in this way will probably be more speedily prayed out.

IN FIGURES, OR SPELLED OUT?—Writers of equally good judgment differ in their custom and advice in reference to

spelling out numbers, or putting them in figures. All agree, however, in advising that numbers above 100 should be given in figures. In medical writings we are inclined to place the dividing line (under which to be spelled out), at 10 instead of 100. When giving statistical data so that other figures are collated in the same paragraph we would advise figures in all cases whatsoever. When but one or two items referred to, and requiring the numerical terminology, occur in a paragraph, it is as well to spell out even in condensed scientific reports, especially numbers smaller than ten. But good taste and judgment must decide in all these matters, concerning which we do not believe in rigid rules. We would in certain cases think it perfectly right to break the old rule that figures should never begin a sentence. It would in the great majority of cases be in bad taste, but sometimes it would be just as ridiculous not to break the rule. A large majority of people desire to be bound by, or to bind themselves with, exceptionless rules. They have missed the best part of education, which is to have learned that the best rule in all cases is to make or to break rules according to reason, taste, and good common sense.

CHAPTER XII.

CHILD FETICHES.*

It is now an almost trite and over-emphasized truism that "the ontogeny repeats the phylogeny," and we have heard much concerning this fact as regards child study. But, so far as I have been able to learn, the subject of the persistence of inheritance of fetichistic habits in children has but little or not at all attracted the attention of students or observers. And yet it is a fact that most every intelligent parent or child-lover must have seen or negligently passed over. The data adduced in the excellent study of Dolls, by A. Caswell Ellis and G. Stanley Hall (*The Pedagogical Seminary*, Vol. IV, No. 2), although allied, are by no means psychologically identical with those of the phenomena I shall illustrate, and in some respects are quite dissimilar. Some phases of doll psychology doubtless tend to fetichism, but so long as the doll is, properly speaking, a veritable doll, it is an object of affection, and its existence flows directly or indirectly from the reproductive instinct. The savage's fetich, however, is not born of this instinct, and many children exhibit characteristics which can only legitimately be connected with the fetich worship of primitive peoples. The following instances are either personally known to me or are vouched for by friends whose report I trust.

Case I. A. M. was three years of age, when one day his father, who is a wealthy gentleman, told him that among some of his poor tenants there was a little boy whose name was Joe Dean, who was a bad little boy and did all those things that children do who are not rightly brought up, and such as he was sure his child would never do. At once this Joe Dean became

* *The Pedagogical Seminary*, January 18, 1908.

associated in the child's life with all that was evil. Little A. was not a bad boy, but would indulge in fits of perverseness, such as any child might have who preferred his own way rather than that of the parent. When these naughty times came on him he would then say he was Joe Dean, and retiring to an adjacent room, he would close the door, and his mother would hear him stamping and shouting and bidding Joe Dean go away. Soon he would return with the tears all dried up and a bright, smiling face, assuring his mother that Joe Dean had gone, and that her good boy A. was with her once more. This habit was continued until he was six years old. One day, after his father and uncle had returned from the city, he quietly said, "I want all of you after dinner to come out on the lawn to a funeral;" they said "whose funeral?" "Never mind," he said, "I'll show you." With anxiety they waited the time set by the little boy, when on going to the lawn, they found he had dug a little grave, and beside it was a small piece of round wood about the length of the grave. This he told them was Joe Dean, and he was going to bury him, and that would be the end of the bad boy. He had taken one of his aunts into his confidence, and had her write on a piece of paper the following epitaph, which, after the grave was filled up and supplied with a small white pine head stone and a foot stone, was spread out on the grave; it was found to contain these words: "Here lies the body of Joe Dean, never to come to life again." (It is the family belief that the words were of his own prompting.) From that moment the fits of anger and freaks of disobedience disappeared. His whole nature changed, and up to the present time, when 13 years of age, he has never been in such a state of mind that the character of Joe Dean could be associated with his daily life.

Somewhat similar to the foregoing is the following:

Case II. When about two years of age, D. assumed a second self, who was ever present with her in angry moods, and on retiring to the corner of the room, or to an adjacent room, D. would actively shake her skirts and bid "Sarah Jane" begone.

"Get out, Sarah Janel!" she would say, and in a few seconds all the cloud of anger, crying, and fretfulness would disappear. One day she returned from Sunday School and told her grandmother that she had met a lovely girl there whose name was Hossie Grafell. Upon further questioning her at that time, it was found, according to her report, that Hossie Grafell's mother was living, and that her father was dead, and that she was an only child, and that she didn't say what D. said. When asked to explain, she replied: "I say I won't go to bed," but Hossie Grafell says, "I would rather not go to bed." A former nurse girl, without our knowledge, had taught her to say, "You nasty thing." She said Hossie Grafell would not say that. Hossie Grafell was a dear child, and only said the things which pleased her mother. So D. assumed that when she was good, she was "Hossie Grafell," and when she was bad, she was "Sarah Jane." This was continued for several years. It is needless to add that Hossie Grafell was a pure myth.

Case III. N. O. is a boy at present eight years of age. From earliest infancy he has constantly kept by him "Bowsy," a little Canton flannel stuffed dog, about six inches high, with bead eyes, straight tail, and four stiff legs. Up to two or three years ago he would never be without this companion for an instant, but carried it in all of his plays, from the time that he would wake up until he went to sleep. Some two or three years ago he quit carrying it constantly in the day time, but never would go to bed without it. It has been forgotten several times in traveling, and the child's grief was so great, and the danger of producing illness so apparent, that it had to be shipped to him at once. No similarly made doll or effigy would do, and the mother has had to be very careful to have a duplicate on hand all the time in case of loss of the original, but the duplicate is made with scrupulous care, so accurately like the old as to deceive the child; at least he always pretends to think it the same one. Sometimes when it has been impossible to get the original or duplicate, the child has only gone to sleep, at nights, after

long crying and sobbing. About two years ago he became somewhat sensitive about the habit, fearing that others would ridicule him, but at the present time he shows no sensitiveness whatever upon the subject, although the parents and servants are careful not to ridicule him. Neither the parents or his little sister by action or word, either of encouragement or discouragement, have seemed to have an influence upon his addiction to "Bowsy." A year or two ago his mother made a dog exactly similar to the old one, but with a curled tail instead of a straight one. He accepted this addition to the family, but frankly stated that he did not care anything for this dog, that it should not be called "Bowsy," but might be called "Browney," and might, if it pleased, go to bed with him, following after "Bowsy."

I think the two following instances, when carefully scrutinized, will also be recognized as having a different psychologic origin from that of doll-loving.

Case IV. "A P., when an infant, was weak, and was always wrapped up in blankets. She selected one certain blanket and would never go to sleep without it. She personified it by the name of 'Esther,' and always regarded this blanket with a kind of affection and had a sort of companionship with it. As she grew older the blanket shrunk until it was so small that she could only lay it up to her face, and, as it were, breathe through it. She took it to boarding school, and her companions could not shame her out of going to sleep with it. At the age of eighteen she went to Europe, making a trip up the Rhine and to Switzerland, etc., with a party of school companions; the blanket was always with her at night. At a fashionable boarding school it was likewise her companion. The last time I saw this blanket it was about the size of a large pocket handkerchief, yellow and much darned. Miss P. has always been able to find it in the dark by the feel of it, and to distinguish it from other flannel by its own peculiar odor. It is as well beloved as ever, although Miss P. is now twenty-seven years old."

Case V. A cousin of A. P., when a little boy, was accustomed to put himself to sleep by rubbing the back of his hand on the starched and tucked end of the pillow slip with which his crib was provided. He was pleased with its smooth feeling and coolness, and would not go to sleep in any position in which he could not move his hand gently to and fro over the starched and ironed surface. This sort of pillow slip was carried when traveling, and his mother was careful to have such slips taken to the country home. His devotion to these peculiar pillow cases was such that when going to school he insisted on taking them from home, and declared that it was impossible for him to sleep soundly without them. He invariably went to sleep by rubbing the back of his hand gently to and fro over the hard, smooth surface of the tucks and hem. The last heard of him was when he was about fourteen or fifteen years old.

Case VI. F. J. was an intelligent and perhaps neurotic girl of seventeen or eighteen. As long as she could remember she had been accustomed before retiring to give some object in her sleeping room three caresses or pats. When she got into bed without doing this she felt compelled to rise and do it before she could go to sleep. The object was always some pleasing thing, such as a vase, a picture, a box, or bit of furniture. When she occupied the same room for a long time the object to be patted was changed occasionally, according to her whim, but was not changed each night. She would often choose one thing for months together. When away from home or traveling, on entering the room which was to be her sleeping room for the first time, she always unconsciously made a mental selection of the thing that was to receive the three pats.

Case VII. F. B., from early childhood, has been in the habit of using a peacock feather or whip-lash dangled over a shut book to aid her in a method of self-amusement. The feather was first employed, but when this was broken by usage a small whip with a limp lash took its place. Several such whips were used up during the years of her childhood. The end of the lash

was held fluttering over the Kate Greenaway figures of a closed picture-book, and with the eyes directed to the figures or the whip-lash, the child would talk to herself by the hour. One might suppose this to have been a kind of self-hypnosis and perhaps implying a morbid habit of mind, but the child was perfectly normal-minded in all other respects, healthy, and happy, and when carrying on this soliloquy was not hypnotized or "entranced" and apparently was as natural as a child when playing alone and chattering to itself or to a doll. She preferred to carry on this procedure when alone or at least when unobserved, and would not do it at all when strangers were present. The soliloquies when overheard by the parents or her sister were very interesting and peculiar. They were in early childhood almost invariably metrical and rhymed, and if a rhyme did not come pat, one was made whether it was a real word or not and also regardless of the sense. Usually there was a thread of narrative or of logical sequence more or less clearly running through the jingle. After a few years the child stopped versifying and rhyming and told fairy stories and all sorts of tales to herself, the whip-dangling never failing. The parents describe these stories as partaking of the *style* but never of the *matter* of the fairy tale or story book last read. All the incidents, names, etc., etc., were original and never an echo or memory of the story read by herself or to her. There was never any tendency to indulge in this amusement to excess, and as her (very intelligent) parents were alert to watch for any evidence of morbid mental action and yet failed to detect such, she was allowed to continue the habit almost daily until the child was about fourteen years of age. A physician then advised that it be gradually discouraged, and this was successfully done, though even at the present time when she is over twenty years of age, a bright and intelligent woman, she likes occasionally to soliloquize by the aid of something held quivering over her book.

Case VIII. Dr. H.'s two daughters (now grown up young

ladies), from the age of five or six to about ten or twelve, had a smooth, oblong stone about six inches in diameter, with which they always played and would never let it be thrown away. They called it "Tom Stone" and carried it about in a baby carriage, but did not think of it at all as a doll, and their remembrance of it today is clear that they did not have such feelings toward it as children have towards dolls; they never dressed it up as a doll. One of the interesting things about their feeling toward "Tom Stone" was that they constantly put it into the sunshine to get warm. They are now unable to determine whether or not this was done to make the stone happier by the warmth or whether the warmth felt more comfortable to the hands.

Case X. Two ladies tell me that when children they formed among themselves what they called a "missionary society" for mice. Miss H. had kept about her body for a year a little white mouse. It would nestle in her sleeve, in the waist of her dress, etc., all the time. After the death of this white mouse the girls formed the "missionary society" so-called, in which, without the knowledge of the mother, they fed mice secretly, until finally Mrs. H. found her house infested with mice, and had to set traps, in which over thirty were caught.

Miscellaneous Cases. Miss H. had a stump some distance from the house, of which she was very fond. For a year or two she would constantly visit this stump and sit by it whenever possible. She was greatly grieved when this stump was pulled up.

Mr. R., now 40 years of age, has a piece of flannel blanket which he has kept since childhood, and always demands it when he is ill or when he gets hurt, calling it "his baby." He is really miserable when ill, if he does not have it, and when he was hurt and taken to a hospital, he actually sent home and got it.

Mr. H., when a boy, always twirled and curled the corner of the blanket on going to sleep.

I know of a lady who preserved two old spools, with a string

in them, with which she used to play when a baby, and although now a married woman, keeps them in the upper drawer where she can look at them occasionally.

Miss H. has always been attached to a little down pillow with a long cover. She is, today, a girl of 20 years of age, and yet protests that "it feels better than any other pillow she ever had." She now always carries it away to school with her when she goes.

A little child of 4, in a hospital, who had never been able to play with a hoop, secured the wooden hoop of an old keg and kept this about its neck all the time.

It appears evident to me that the foregoing histories are not instances of inheritance or atavism, but, like many things thus classified, they are simply instances of *de novo* productions and habits which have arisen from precisely the same causes and conditions as similar ones in the adults of savage peoples. One might philosophize at much length upon their *raison d'être*, without exhausting the suggestions aroused, and perhaps not exactly hitting upon the true explanations. I take it that very often the fundamental reason of origin may be the need of the mental mechanism of these jelly-like developing beings to objectify physic things or habits in order to intensify and realize them. Materialization, real or vigorously assumed, is necessary to give a sense of validity and reality, and, as it were, to etch deeper into the mobile protoplasmic substratum of thought and feeling.

Perhaps, also, the loneliness and alienation which grieves all of us, the isolation which is a necessity of individuation, is dumbly and dimly felt by these young exotics, and the hunger for companionship becomes manifest in fetichistic habits.

Often, too, many mixed motives compete or complete. We smile when a simple mind thinks his watch superior to that of others, and in the child the beginnings of the egotism of possession are naively shown in fancied superiority of any chance object selected. It has been contended that much religion or

theology has its origin in the pride of belief in the superiority of the tribal or national god over that of the despised neighbor.

Once established, of course, the habit intensifies itself by mere repetition.

Almost every writer defines fetichism according to the teleologic bias of his mind. The top-lofty definition of Comte was framed to prove his theory of the triple stages of human development. Lubbock's idea of it as a method of constraining the deities to comply with desire seems also to do violence to the facts, and even the conception of Tylor appears to give the savage too much intention and self-consciousness. In many types mere habit, or satisfaction with the familiar, is quite sufficient to account for the beginnings, and for much of the continuance, of the love or use of an object or of persistence in a method of action on the part of primitive minds. We should not import into these mobile unformed psychic mechanisms our own habits of selfconsciousness and purposiveness. Every negro servant at his or her work objectifies some person there in the air, converses with the imagined one, and even "gets mad" at him. Charms and talismans indicate quite as often mere satisfaction in familiarity, repetition of touch, etc., as they do any desire for things obtainable through the object. The child is also most loyal and doubtless feels some compunction of conscience in failure of faith even to a toy, to an imagined other, or in neglect of an oft-repeated manner or method of action. Even agreeableness to the touch of an object may undoubtedly influence the adult judgment and determine weighty affairs of life. We need only a more subtle and discriminating observation of the unnoticed reasons for our own prejudices, likes and dislikes, to be able to comprehend the most obstinate fetichisms and superstitions of the plastic mind of the child.

CHAPTER XIII.

THE STORY AND LESSONS OF AN UNKNOWN HERO'S LIFE.*

John Clark, of Scotch-Irish stock, his parents both American-born, the son of Captain James H. Clark, was born on board his father's ship, *El Capitan*, March 9, 1842, and up to the age of nine was not on shore. He was then sent to school in New Orleans and attained his education, all he wanted, in six weeks' attendance at school. I hardly think he learned at school the physical and mental pluck, the physiologic and psychologic heroism he afterward showed. Father and mother having died, John felt at liberty to graduate himself, and to return to his *mater alma et dura*, the sea, for a post-graduate course. As cabin boy he endured all the physical abuse and cruelty which at that time it was thought proper to visit upon orphan boys. For six years he was knocked about, kicked, and cursed upon many ships, unconsciously, I suppose, seeking some officer who would be less brutal than the last, and consciously finding the new captain worse than the old. At the age of sixteen he had found one exception, Captain J. D. Hawkins, of the ship *Royal Arch*—bless the name! To him young Clark legally apprenticed himself for the term of seven years. Hawkins treated the boy decently and taught him seamanship and navigation. Both men were so well satisfied with each other that young Clark, after his years of apprenticeship were over, became his second, and later his first mate. At about twenty-five Clark engaged in the shipment of fruit for a Philadelphia firm, plying between the West Indian Islands and Philadelphia; but at thirty he tired of coasting and

* An address to the Alumni Association of the Jefferson Medical College at its annual meeting, Saturday, January 20, 1900. From *The Jeffersonian*, February, 1900.

became mate on an ocean-crossing vessel. On the third trip he became captain. For eight years nothing particularly noteworthy occurred, but then, on January 16, 1880, off the coast of Newfoundland, a hurricane dismantled his ship, called the *Hattie Norris* ("das ewig weibliche!") and she went to pieces on the reef on January 20. The twenty-five men of the crew lashed themselves to a part of the deck and awaited the death that came to all but two. Clark remembers that he was conscious for seven or eight days, during which time he ate the sleeves of his oilskin coat to the elbows—as far as he could reach with his mouth—and that after chewing the material he swallowed it and the saliva with great satisfaction. Although swollen from cold and thirst, eating the oilskin cloth seemed to cool his tongue. The last thing he remembers was the swelling of the tongue and his effort to hold the mouth shut by one hand beneath the jaw and one upon the head. For perhaps a year it was impossible to get this arm down from the head. As an indication of how cold it was Clark remembers that one of the men spat on the deck and that the sputum froze before it reached the plank and bounded away as a bit of ice. Not a particle of food or fresh water was saved from the vessel. When rescued by the steamship *Nederland*, Captain Grant, twenty-three of the twenty-five seamen were dead. The two survivors were Clark and a lad, Lawrence Miller, aged fifteen. Young Miller regained consciousness earlier than Clark; he also lost his feet and hands. He afterward told Clark that he had preserved his consciousness after all the others had become silent, and that when at last he called to the captain and received no answer, he broke down and cried like a baby.

The rescuer, Captain Grant, in after years hunted Clark up in the Episcopal Hospital of Philadelphia, and went over the story, the dates of the wreck, etc.† Clark remembered well enough the date of the wreck and the lashing to the deck, and of

* The dates on the Jefferson Hospital books are not correct, a fact easily explainable, however.

course Grant knew the date of the rescue. There were eighteen days between the two. Will physiology permit the belief that the human body can survive for eighteen days, without food or water, subjected to intense cold and drenched with sea-water? I am not dogmatic about it either way, though I do not think we should doubt the fact, whatever physiology may demand. In vital matters the impossible sometimes happens. It may be that the very fact of the freezing of the extremities was the real reason for the preservation and nourishment of the central organs upon which the preservation of life depends. Possibly also the continual wetting of the body by sea-water permitted enough absorption to keep up the requisite amount of blood. I wonder whether it is known if in absorbing water the skin will refuse the salt of which the mouth and stomach are incapable. It is the acme of torment:

Water, water, everywhere,
Nor any drop to drink:

and making even old oilcloth palatable.

Grant brought the frozen, unconscious men to Philadelphia and they were sent to the Jefferson College Hospital. From the day Clark lost consciousness, seven or eight days after his vessel went to pieces, he lay for several months with no sign of normal mental action. He afterward often asked the younger Gross about this, and was always told by him that there was no sign of natural consciousness for eight or nine months. One morning Clark heard a church bell and he had at once a resumption of the memory and of the feeling, even of the words last heard on the wreck. For yet a long time, however, the mental action was dreamlike, sluggish, and fantastic, and only in the second year was the mind natural. Articulation was likewise faulty and it was two years before the enunciation of words and sentences was as good as formerly. Even now, if excited, there is aphonia or stammering.

The crippled, legless and handless boy, Lawrence Miller,

was alive five years ago, but of him I can learn little. It would be of added interest to know if there has been a tithe of the pathos, tragedy and heroism shown in Clark's life. Of one thing Clark is sure, this boy's eyes were not injured, so that he did not share the woe of comparative blindness which Clark has so manfully endured.

When Clark recovered consciousness he found himself toeless and fingerless. There soon followed many other operations by a long list of surgeons. The details of these operations would be interesting, but they would occupy too much of our time. Clark is sure his count is not too high, and that at least twenty-eight important operations have been performed on his body. He has taken ether seventeen times. He was always rebellious to ether and anesthetization; he says he has often heard astonishment expressed at the amount of ether required to bring about anesthesia. So abhorrent has the drug become to him that he would prefer and has preferred to endure the most excruciating agony rather than submit to its use. Several strong assistants have been required to hold him during later operations.

As a result of the twenty years of surgical history, both lower extremities are wanting from the knees, all fingers of the hands are gone except one or two distorted and almost useless ones, one eye is blind, and with the other he has barely enough visual acuteness to enable him to walk safely, but not to read or to see what he writes.

As my object tonight is not to consider the technical, scientific, or surgical aspects of the case—a task of course for which I am utterly unfit—I will only say that the successive amputations of the lower extremities, each higher than the last, were made necessary by the gangrenous condition of the tissues produced by the freezing. The stumps would heal apparently well until the man got out of bed, when pressure and gravity would cause the weakened, poorly vitalized tissues to break down and ulceration would again and again ensue.

After about three years in the Jefferson Hospital Clark went forth

to battle with the world, a sadly battle-scarred veteran already, but with a tough determination to fight it out, despite his mutilations, and without a cent in the world. He could have had a hospital home on Bedloe's Island, at the Government's hands, but Philadelphia was his home, as he thought, and he staid here, supported, I suspect, by a certain grim resolve which may often have come preciously near to obstinacy, a characteristic which seems more than excusable, however. How he got his "peg-legs" to walk on, at this time, I do not know, and the history of the next six years is so awfully pathetic that it seems almost sacrilege to attempt even glimpses into their mysteries. If it were not for the sake of exposing a great social sin I would not have harrowed my own and my friend's feelings by probing and quizzing him, as I have done, to extract from his unwilling lips some hints of these heartrending years filled with anguish of mind and torture of body almost beyond belief. There was the brave struggle for self-dependence and self-support, made more atrocious by the handicaps of his footlessness and handlessness, by the recurrences of the sloughing of the stumps; there was the repeated giving-up and going to hospital, the repeated operations, and the coming forth again and again, and with pitiful iteration. All of this was exquisitely heightened by the fact I have constantly struck against, of Clark's heroic resolve to be self-dependent. No charity-mongering or almshouse infamy for him, mind that well! I will permit myself only two or three glances into these horrible years. He tried to earn a living by selling fruit, and in the heart of a rich city filled with luxury, he has many, many times gone to what he has called bed, with hunger gnawing him. The irritation of badly-dressed devitalized stumps, and ill-fitting sticks or peglegs continually resulted in swelling and ulceration of the legs with a torment we can but faintly imagine; in the insanity of pain he has often plunged his pocket-knife into these necrotic and edematous stumps, in the mad attempts to find some relief. From a good woman who has befriended him I learn many such things about him which he would not or could

not tell me, and this, the last wretched detail of the kind I think to relate: In all these years, indeed, up to three years ago, his hands, or what was left of hands, have been absolutely anesthetic, so that, as you physiologists well understand, he has always been injuring them by unperceived fire and accidents. It has happened a number of times, three-fourths or wholly blind as he was, that he has scalded them badly with hot water, producing large and slowly-healing burns and ulcers. But he was not spared the pain, which came on some time after the accidents, in the axillas and about the shoulders.

It seems that after about six years of this uncomplaining struggle and misery, two good women put their savings together and bought for him a pair of artificial legs, and as Clark says, although he is not an Irishman, they put him on his feet once more and "started him in life." The last amputation, the left leg at the knee, was about four years ago. Perhaps all the devitalized tissue by successive amputations had at last been cut off; perhaps also the artificial limbs enable the stumps to bear the pressure and irritation better than the sticks had done; but, at any rate, there has been no considerable trouble from ulceration, hemorrhage, or edema for four years. And now also that sensation has for three years returned to the palms and backs of the hands, these are not now wounded or burned. He has still to take things in his mouth to tell their shape, etc., and, in the absence of fingers, buckling and unbuckling straps, tying knots, etc., can only be done by the help of teeth and lips. A new trouble is beginning to appear—the loss of teeth. If Captain John will permit it, some humane dentist should help him a bit! But he is intolerably skittish of such propositions. When a friend recently proposed to give him a new pair of artificial limbs, there was rebellion, and the indignant "Why, you would despise me if I accepted the gift!"

The sad history of the eyes does great credit to Dr. B. Alex. Randall, who has kindly epitomized it for me, as follows:

"John Clark came under my care on January 1, 188

Episcopal Hospital. After severe exposure leading to loss of several fingers and toes by frost-bite, he had a painful inflammation of the eyes binding down and closing his pupils. Recurrent attacks kept both eyes painful, and the left especially was soft, tender, and nearly sightless. I was advised by my colleague to remove the left eye as hopeless, while making an artificial pupil on the right; but I performed an iridectomy on each eye. Vision rose to 10-200 on the right and counting fingers with left at one foot. A year later the left lens became cataractous, and, after another year the right also. At his solicitation the cataract was extracted with fair success, but the pupillary space closed. Needling the opacity gave a trace of vision, and a new artificial pupil gave no useful sight. A third iridectomy a year later resulted in but temporary gain and the cornea gradually clouded, obliterating all vision on this side. Meanwhile the left eye had so far come into use that he was given a strong lens to replace the natural one around the edge of which he looked, and today he sees 20/80 and can read large print, enabling him to earn his living with the eye which had been condemned as utterly hopeless seventeen years ago."

Would you not suppose that fifty years of such a life, ten of which were as terrible as I have hinted, would have broken the moral and physical back of any man? Well, you don't know our hero! In 1891 he began traveling through West Virginia and Virginia, selling surgical instruments. He soon took to medical books, and for eight years he has been reasonably successful in supplying the doctors in his territory with good medical literature. He makes his rounds twice a year, carries his package of samples weighing thirty pounds, as well as his two artificial legs, weighing twenty-four pounds, all strapped to his shoulders. The straps sometimes cut his flesh until the blood oozes through his coat, but that's nothing! He walks five or more miles—once he made thirteen—in one day. Although it would seem that he had certainly enough to do with cold, he endures winter much better and more comfortably than summer. For twenty years he has

been unable to read a line of ordinary print, and yet he writes a better hand and in better English than many a college graduate or national lawmaker. By the help of the other hand he places the penholder beneath a contracted, distorted thumb and across the base of a lost second finger, and thus writes without seeing his writing. I suspect you are curious to know how he chronicles his orders, keeps his accounts, etc., of the thousands of sales he has made, orders forwarded, etc. Well, God is good to men of unconquerable honor and undefeated will. Every order, every book sold, every date and account, every address, are all accurately transcribed in, and by him are reproducible without error, from a most wonderful and well-kept set of records, journal and ledger books stored in his memory-safe. He writes his orders with a fountain pen—in a strong light he can tell if the ink is flowing—and the publishing house tells me they are clear and explicit.

When he is to board or leave a railway car in the states he travels over, the train does not start until he is safe in place (railway men are splendid fellows!), although I fancy the waits must sometimes be somewhat long, for the captain has to move very slowly and circumspectly. He has three different points for his crutches, each adapted to a peculiar weather or condition of the ground. If he only had eyes and fingers, he is sure, and I agree with him, that he could make a better artificial leg than all the experts in America have ever succeeded in doing.

I suspect the captain is too great a sinner against the laws of scientific charity, and that his sympathy with "suffering" keeps him much poorer than he need be. Who is unfortunate, in comparison with him? And yet he is always dividing his dollars with those he thinks "unfortunate." He has promised me to make a desperate endeavor to keep his sympathies from descending so far earthward as his purse, and he is going to try to save one-fifth of his income for the rainy day that must come sooner or later.

Not a drop of alcoholic drink has ever passed his lips. Neither

had the boy Lawrence Miller ever tasted liquor. I think Clark believes that to this fact was largely due the salvation of the two. The other twenty-three sailors were drinkers.

Sometimes—would you believe it?—there rises in him the hunger for the sea, and when this grows irresistible he throws thrift to the dogs, boards the train for Norfolk and for a day wanders—with what thoughts and feelings!—about the docks and shore. He dares not take a voyage, because of the danger of injury from the inability to keep, literally, “on his pins,” when other foundations are not most fixed and abiding. He is without a living relative, but calls Philadelphia his home, returning here for a few weeks’ rest every year or two, with a kind couple who are glad to have him visit them in this way; and who watch over him in homely ways—while the rich are attending the operas and receptions, and most properly growing more sick of the burden of themselves.

There is one little anecdote so characteristic, and revealing so well the fashion of Clark’s psychic make-up, that I can not resist the temptation. Clark had never met Dr. Blank, the author of one of the books he was selling, but loyalty to the unknown author was not a whit less clear and active. Being editor of a medical journal, Dr. Blank had two or three enemies in the United States, and one of these enemies had spoken ill of him. One day Clark was offering Blank’s book to a physician, when the latter quoted the words of Blank’s enemy and evidently assented to them. Clark defended Blank, of course. Finally the customer said that, although Blank was a rascal, he still could make good books and that he would buy the volume. “Not from me,” said Clark. “You don’t deserve to have one of Blank’s books, and I will not sell it to you,” and he packed up and packed off! In a commercial land, where even the Presidency is up for sale, that seems to me splendid!

Scientifically, there are a number of questions of alluring interest in Captain Clark’s experience. Alas, that they are answerless, or must remain as sources for wonderment. I have alluded

to the fact of the preservation of life without food or water, and despite cold and wet for so many days, to the absorptive power of the skin, and to the possible influence of freezing of the extremities in preserving the function of the central organs. The reinstatement of sensation in the hands, after seventeen years of anesthesia, is an astounding instance of nerve regeneration and of the untired and successful efforts of the cytologic Physician to repair injury.

But the most striking fact of this kind pertains to the amazing powers of resistance and endurance of the human body. Can one imagine but a fraction of the insults and injuries to those stumps, to the heat-evolving mechanism, to cardiac function, to the neurologic structures of this man, without bewildering astonishment and hushed reverence? One looks with silent awe and something like scientific adoration into the Holy of Holies of vital mechanics and metabolism, and in doing so one sees the warp and woof of science and religion converging in the hand of the divine weaver who sits at the heart of all vital mechanisms, and who weaves the garments of flesh which we see, which we wear, and which in part we are. The guiding lines, the reins of physiology, the mystery of neurology, lead on until we find them held by metaphysics. Neurology and religion in a last analysis are one. Before the marvel of the persistent wound-healing and reparative powers shown in Clark's case, I pity the logical function of the atheist and the mental sanity of the materialist who is not abashed, who boldly stares, but who does not see. Was it spirit or matter that did these miracles of healing? Was it psychology or physiology that spurred the will to its task, that was not defeated in a thousand defeats, and that failed not in all the failures? Was it the body that ruled the mind, or was it the mind that ruled? Before this man the question needs no answer.

It is hard to reach the community, the so-called public or world, but each should try to get into the head of that stupid composite a needed lesson, whenever it may be possible to do so.

If only the composite ear could be roundly boxed for its blunderful crime of rewarding weakness and hypocrisy and punishing honor and self-dependence. The fashionable disease, hysteria, is often founded upon criminal egotism, and is not seldom a mere euphemism for laziness and selfishness. To leave a physician's office that has been filled with such patients, to go down streets past rows of pediculous beggary in the guise of pencil-peddlers, to go to an almshouse or dispensary clinic thronged with shallow shams and moral hucksters—all ministered to by a charity as selfish, unthinking, and evil as the sin it encourages—all this while the Clarks are hiding their wretchedness and burning insentient hands rather than hold them forth—all this is shameless and pitiable. It is our duty, both to the self-respecters and to the self-sellers, that we run all beggars, however disguised, off the streets, exclude them from every dispensary and hospital, teach them at the same time that they can, and just how they can, be self-supporting. Finally we should try to teach the dying compounders and sentimental sloppers that to give money indiscriminately is to hire people to be frauds, is to encourage shamelessness and sin, and punish vigor and self-dependence. In its last analysis indiscriminate charity is the hiring of criminal weaklings by sentimental weaklings, to give the sentimentalists future chances to flatter their own vanity by the bribe of pucillanimous alms-giving. It is a very roundabout way of tickling one's own ribs under the assumption of benevolence.

To come down to one detail, the cripple is not pleasant to look upon, and the eyes are turned away from him. In a land full of wealth, ingenuity, and crazy with mechanic devices, what a public disgrace that a man handicapped by the loss of one or even two legs, should be allowed to walk the streets with "peg-legs." These stumps, their needs, the treatment they should receive, the devices to enable the man to walk and work, are topics shunned and ignored. Discrimination and judgment are not characteristics of the will-maker, the endower of fashionable charities, and the lover of newspaper-heralded endowments.

Forth from the hospitals and amputating rooms go the poor mutilated wretches, and with their dire need they are left to struggle unhelped and unadvised. For years Captain Clark pegged about a city full of pauper-making wealth and selfish charity without properly constructed artificial legs, as every day I still see many doing. For years he tried to dress his bleeding, ulcerating stumps as his uninstructed, unskilled, and fingerless hands could make out. He finally found that all cotton material cut the flesh and that only by thick, rough socks, of home-grown, home-woven, home-knitted wool, as many as eight pairs, worn one over the other, would the stumps endure the pressure and remain free from sloughs. But no surgeon and no professional charity-monger ever told him this.

As to professional conduct Clark's case is full of significant and pathetic instruction. I verily believe that all of Clark's awful suffering, all of the bitterness of physical cold has not so hurt him as our human coldness to him. There was a profound pathos in his voice when he said to me that the first physician who felt and acted toward him as a human being and brother was Dr. Howard Kelly. The others had looked upon him and treated him as "a case," as so much "clinical material." Since Kelly a few others showed some feeling that he and they were of the same humanity, springing from one Father, and moved by the same hungers and satisfactions. No sensible physician would advise sentimental blubber or overflow toward patients, for that would be as bad an extreme as the atrocious brutality of some foreign clinicians. But a surgeon and his assistants can be cruel unwittingly, by the mere tone of voice, manner of gesture, etc. It is as easy and more effective to speak kindly as it is to speak as if one had a mechanic glottis stimulated, not by a soul, but by electricity from the street wire. Kindness is not weakness; harshness is not manliness. Wounds heal better for the humane surgeon than for the dictatorial one. Conceit is septic. Vanity is morbidity.

For every one of us, professional or lay, what a lesson in forti-

tude is this man's life! If to live up to one's capacities, never despair, hold to the right, be self-respectful and self-dependent, yield to no difficulties and defeats, and if, finally, to conquer, to win the race despite the most outrageous handicaps—if all this is true heroism, then is it a mistake to call this man a hero? He teaches more eloquently than words the shame of complaint and the duty of endurance.

POSTSCRIPT, January, 1908.

Since the foregoing was written Clark has kept bravely at his work between the interruptions caused by the necessity of recurrent surgical operations. Of these operations there have been about a dozen, bringing the total number up nearly to forty. He had an unfortunate runaway accident last year while riding in a carriage: the horse got beyond the driver's control, and the helpless man was dragged for about a hundred feet. His bruises and wounds were severe but not mortal, and after another hospital experience he again resumed his work. Vision has become worse, although he can still see sufficiently well to allow him to walk unguided though only very slowly. He recently succeeded in soliciting money to purchase an ambulance for a local hospital. He is not ready to give up the fight at 66 years of age.

CHAPTER XIV.

VOCATION OR AVOCATION?*

For professional education and medical progress one small medical college, especially if located in a little, instead of a large, city, is worth any two big medical colleges. As a rule the greater the size of the classes, the more famous the professors, then the more untrue the teaching, the more immoral both teachers and taught. Success, ambition, politics, greed, conservatism—the dirty kind—are more certain to rule the minds and kill the hearts of the men in control of the huge institutions than those of the small ones. This is because the ambitious self-seeker and medical politician chicanes for and gets the professorship.

The duty of the rich and of the endowers is, therefore, to avoid helping the unwieldy and ineffectual schools with their (often) ill-gotten wealth; they should help the little colleges. The more the money the less the therapeutics. Everyone who may influence a young man beginning the study of medicine should do his best to keep him out of the big college and to guide him into the small one. The greater the student-body, the worse the teaching. The more pompous the professor, the quicker he should be laid aside. The greater the boast of "science," the more really unscientific. When professors are paid enormous salaries by lay commercial companies, their science is pretty sure to be unscience. Did you ever hear of a professor in a huge political medical college making any valuable medical discovery? If you have heard of such cases, did you ever personally know of one? And, according to some of the mem-

* An address delivered before the Medical Department, Syracuse, (N. Y.) University Alumni Association, June 11, 1907. *American Journal of Clinical Medicine*, January, 1908.

bers of the Council on Medical Education of the A. M. A., three-fourths of the 4000 annual graduates of American medical colleges are too poorly taught to practise medicine intelligently. The chairman of the Council says 58 per cent of those who fail to pass the state boards "cram up" and pass the examination a few weeks later. Dr. Ingalls says that out of 150 American medical colleges 144 are not up to standard in their teaching. Possibly he meant the six were the six biggest colleges. If so, I beg leave to differ, absolutely.

Of all amusing and yet disgusting things we see every day the most egregious is the fawning upon and adulation of the rich sick and the sick rich by our hysteria doctors and leading consultants. Thousands of these pitiful patients are being "rest-cured" out of their money and health with no attempt to learn the causes of their diseases, and with fear that the known causes will become widely known. As a profession we have catered to this gallery-beloved melodrama. Our professors and big-wigs have played the game of strutting before the groundlings and of demanding many-thousand-dollar fees for cures that often never cured, and for operations that frequently were unnecessary. The medical profession should long ago have stopped this quackery of \$5,000 and \$10,000 fees. Every one of us knows it is charlatanism. The science and skill of the surgeon and the great *poseurs* is no greater, is often not so great as the science and skill of the family physician who for weeks or months or years combats or conquers the common diseases of his patient. And yet for infinitely more conscientiousness and care the family physician is paid a few dollars, when the operator is paid hundreds or thousands. If these high-chargers had a spark of professional ethics in their souls they would refuse the absurd fees until their brothers of the guild should be compensated proportionately for their service. If the pseudomedical financiers will not choose to help their hard-working fellows, then these should tell the public what a fool it is to pay ridiculous sums for some of its jobs.

Because, also, we all know that the few reputation-seekers and

money-makers are no better operators, and often not so good, as the quiet men who are winning their spurs. Many of the quiet gentlemen do not want spurs, and honors, and LL. D. degrees, and professorships.

Never consult with the famous, should be the motto of the honorable general physician, especially if the famous man is an extortioner, a professor, and lives in a great city. Such men are usually politicians and self-seekers who play the game, not for the poor referer of patients, and not for the poorer "clinical material." The vast majority of practitioners of today are exactly like the lambs which the Wall street lions and tigers, known regularly as bulls and bears have such fun and success in devouring. The brokers and the experts are like unto the "great authorities" and "professors." If you have a little hoarding to invest, do you ask the Jay Goulds and the Harrimans what to do with it? Whether in finance or in medicine, the safer rule nowadays is not, *Trust the expert*, but is, rather, *Distrust him!*

Especially as to much specialism! Deeper every day in degradation fall the neurologists, ophthalmologists, gynecologists, genitourinaryists. Should not the alienists as a body be examined by a special commission *de lunatico inquirendo*, appointed by sane murderers, to determine their mental condition, and particularly how far financial motives govern psychiatry? Did a fashionable neurologist ever do anything for a patient except to name or misname his disease, and humbug him? Did official orthopedics ever prevent a case of lateral spinal curvature, or cure it while in its functional stage? When organic, it is glad to try to cure it, but it never then succeeds in curing. Would you trust any patient with evident and glaring eyestrain to the "leading ophthalmic surgeon" of any large city in the United States? What right has the gynecologist to set up for himself? General surgery and gynecology, even as defined, have constantly overlapping spheres. What terranean or subterranean reason is there for the existence of the gastrologist? Is there a book on gastric and intestinal diseases which says a word about the chief

cause of these diseases? And yet Professor Musser—is there better authority?—asks, “Who has not very often seen these diseases cured by the relief of eyestrain?” And the G.-U. man—well, one may not speak of him in public! And one can not speak of him in private. Should not the general physician know about the diseases of the skin, at least as much as the dermatologist now knows? For a generation the most successful, the most scientifically and therapeutically successful proctologists are quacks, each making a hundred thousand dollars a year, and their patients never begrudging them their fees. That is at once very solemn and very funny truth.

Such things arouse the question, Is it wise to have killed the family physician? If you take from him all minor and major surgery, all gastric, dermatologic, laryngologic, ophthalmic, gynecologic, neurologic, psychic, proctologic, obstetric, venereal, and laboratory diseases, what is left the poor devils which the medical colleges are turning out at the rate of four thousand a year? The answer is both amusing and amazing: they are simply of use as referers to the specialists and leaders. Of what advantage a sign-post that walks? Why not cut off the doctor's hand and nail it up with the pointing-finger, at the cross-roads? Why not have a printed form to mail or hand to every patient: “For diseases of the digestive organs consult Prof. Blank of your nearest city; for every possible and impossible surgical ailment the great operator So-and-So; if the child squints, can't study, or has anything whatever the matter with it, gets its eye-muscles cut by Tenotomo Maniac, or buy a pair of specs at the department-store, or of the Eyes-Examined-Free man; for hysteria there's nobody equal to Blank, the rest-cure man; if you are a paranoiac go to the great witness of the last murder trial. If you have nasal and sinus-troubles, get your forehead bored, your turbinates removed, or your deflected septum straightened, by Noseyman; if you have headache get some phenacetin at the soda-water fountain.” And so on. How is the family physician to live as a mere sign-post? In the

first place, the specialists would say, "It is not at all necessary that he live." Secondly, that riddle has been solved long ago: if the fee is sufficiently large, may it not, asks Chicago, be "divided?"

When the general physician gets in deep water, when in doubt, he should of course ask for a consultation. But as surely and as a rule let him beware, and warn the patients' friends to beware, of the famous far-away professorial consultant. And before any consultant is engaged let it be understood by all concerned that the consultant's fee is to be in some sort of relation to that of the attending physician. If the consultant will not consult, gratis, in a charity case, let him never be called in when the rich patient's life is at stake.

Indeed, is it not becoming plain that the functions of a professor in a medical college, and especially in a big one, are so onerous that if he does his duty to the students and the hospital he should not have private practice? There is enough work connected with the hospital to keep him up to the mark in clinical and operative progress. He must read and study more than is usually possible for the non-teacher, and his lectures and instruction should be made over afresh each year. When I was a student we all had the same lectures repeated each year, and we knew exactly to a day and minute when that old story, effete joke, or eloquent admonition would invariably appear. Unless the professor is properly paid he can not, of course, agree to drop private practice, but he may be sufficiently well paid. In how many colleges, even at present, do the professors pay the institution for the privilege of teaching? That's the way, in fact, that much private practice was formerly obtained, and is the sorry custom entirely dead? The unimaginable infamy and deviltry not infrequently exhibited in the race for a medical professorship are not outdone even by our ward bosses and legislators.

Men do not do such things for the love of pedagogics or science. Within twenty-four hours after securing his professorship for

which he had fought and chicaned for years, a medical politician had closed a contract with a layman whereby, because of that professorship, the professor received another salary much greater than that his medical college gave him. Sometimes the bitter personal rivalry of two teachers, for instance of surgery, results in a bifurcation of the professorship. Each professor of course must have a ponderous textbook and teach a different surgical practice and philosophy from that of his hated rival. The poor boys are sure to fail in their examinations if they answer a question as the rival would have it answered. The divided-skirt professorship of course does not last long, for the "worse" man is certain finally to kill off his colleague by some method—usually by the football tactics of hitting when the umpire is not looking.

When I was studying medicine, and also while an assistant in an out-patient department of the hospital, I found my fellow-students were always interested in operations. They would crowd about the operator, while I was left with the patients who had pain or organs acting badly; functional diseases did not interest them much. When I asked what caused the surgical disease I was stared at as if I were "cracked." When I asked if the surgical disease couldn't be prevented it was evident that I was stark mad. If it was surgical disease with its dramatic blood-and-thunder professor that aroused greatest interest, the little balance of interest remained for inflammatory diseases. These were treated and treated and treated, but if I asked after etiology and prophylaxis, I was again stared at with lifted eyebrows.

I was by no means convinced I was a fool, and I did not lose heart. My conscience kept hammering at my cowardice that "the way to get rid of disease is to prevent it." Surgery is the despair of curative medicine, and must be appealed to only when therapeutics is absolutely impossible. So when I began practising I had a tough time of it. I did not hunger for operations, and I found the operator was often operating when it was

unnecessary, and he had no care whatsoever in preventing other patients from coming down upon the operating table. He did not inquire how functional and inflammatory diseases are caused, and how they degenerate into organic and surgical diseases. I found that as I myself became interested in surgery I grew indifferent to my duty to prevent surgery. I saw my colleagues, many of them surgery-mad, writing articles, buying instruments, "pipe-laying" for surgical offices and professorships, and never once thinking of their duty to prevent patients from becoming hopelessly, surgically, and organically diseased. So I renounced surgery, except minor and constructive operations; with the renunciation, of course, went the piles of money, the secret desire to be famous, to get honors, professorships, and the rest. It was not for me to be one of "the leading ophthalmic surgeons" of my day or city.

Notwithstanding this and without my solicitation I was offered two hospital positions which were avidly sought by others. After accepting one, I found men were using their positions to feed their surgical fame, and that the "clinical material" of hospitals was considered as vivisection material, stuff to practise upon to turn over to the underlings if not wanted by superiors, etc. Indeed, I was advised by my superiors to have the poor dispensary patients come to my office and sit about the halls and waiting rooms to make an effect upon private patients, and the rest. Moreover, I could get some money out of the poor if I worked the affair cunningly. My answer to all that was—my resignation! And later I resigned a higher position as visiting surgeon because I found that there was here no attempt at discrimination between the needy poor and those who could pay. I became convinced that the average dispensary patient was able to pay a small fee, many of them large ones; that the refraction work, the great vitally important thing, was most bunglingly done in such dispensaries and could not cure the patients of their thousand eye-strain diseases.

The conviction grew that physicians should do this work

privately and better than in the public places; that they should have the small fees which the patients could pay; that it was money and health saved for these patient if they sought and got such service privately. The conviction became more fixed that the hospital and dispensary business is overdone, and that the profession has been foolish to encourage the overgrowth, the graft and the craft, by its negligence and participation in the abuses, and by giving its service for nothing. Thousands of physicians are struggling for a living while compelled to do poor and hurried charity work, which in reality is not genuine charity either to the receiver or to the giver. And what is true of this specialty is generally and more or less true of all others. We all know that there is a vast amount of sham, deceit, and wrong in the whole affair. There is a false and hypocritic sentimentalism masking cunning commercialism and medical politics. Clinical material is needed by the medical college for teaching purposes; but today thousands, even millions, are treated to glean out the rare or striking case needed by the professor to attract attention or get him future consultation practice. If he wanted to teach common medicine, not the curiosities and "stunners," the mobs would be differently used and those able to pay would be made to pay. The hospitals and free dispensaries now go into competition with their own graduates just being sent out. It is unjust; it is an outrage, which a higher professionalism will stop.

And it extends to many of the asylums, homes, and institutions for the defectives and delinquents. I visited a blind asylum not long ago, and the first thing I noticed when I entered the grounds was that these "blind" ones were playing a breezy game of baseball. The batters hit the ball and the fielders caught it as well as many league players. Among the inmates I found albinos, and others who could have been given fair vision by glasses, and others who with a bit of surgery could have earned their living. Salaried men were traveling through the land to secure patients. In this and other institutions it was not the aim to make the inmates self-supporting by

teaching them how to go out and make a living by their own efforts. It is not to the pecuniary benefit of the institutions to make the inmates earn their own living, but to prevent them from doing it. A teacher of deafmutes tells me that the schools and asylums for the unfortunates do all in their power to keep the inmates in the institutions and dependent upon charity. The truth is that all blind and deaf-and-dumb persons can make their own living independently, if they are not taught to "lie down on the community," and if they are encouraged a little to work for themselves. Blind "tincup men" by illegally parading the streets can make better wages than at honorable work, but that evil has one good at least—that of punishing the poor sillies who give them money.

We need to examine calmly the abuses of the big hospital of the big medical college of the big city. Private endowers, and the taxpayers of the city and state, are wheedled or forced to give their savings to found and keep up these institutions; and all of us know that the whole affair is largely a fraud, and that they are being corrupted for personal and selfish purposes. Do the professors charge no fees for lodgers in the private rooms? Why should a charitable hospital go into the hotel business and let rooms at \$25.00 or \$50.00 a week?

Every doctor in a large city knows that the staff members of dispensaries and hospitals are using the charity clinics as feeders of the private office, and that good incomes are secured by the trickery. Those physicians who will not or can not secure these hospital positions are compelled to establish private hospitals and sham dispensaries in order that they may march in the great parade of Success, formed by their professorial rivals. But, even then the majority of the profession have no share in or help from the big hospitals. So overdone is the big hospital business that large sums of their charity-money are spent in advertising for patients. In at least one state, Pennsylvania, unimaginable abuses and incredible corruption are bred by the shamelessness of the scramble for the undeserved money of the gulled public.

Do you know that Quay riveted the manacles and mouth-padlocks of his vile political machine upon Pennsylvania by means of these hospitals and charitable institutions, *ie.* ., by means of the criminal participation of the medical profession? Several hundred of these supposedly benevolent and teaching institutions have several thousand trustees—all, in fact, of the most powerful, learned, rich, or influential men of the state.

The state parcels out millions of dollars a year to these institutions, precisely in accordance with the help these thousands of trustees render the Quay and Penrose machine, or exactly, at least, according to their silence as regards machine infamies. One man of these thousands of trustees once dared to raise his voice in opposition; the machine warned all the doctors, who forthwith deserted the brave opponent, and now woe to that man and his institution and the hospital of his choice. At once the successors ask the Harrisburg ring for the millions and they do not even care to defend themselves against the following argument: There are a thousand private colleges and private charities, and a million taxpayers disbelieving in the peculiar methods of education carried on by the state-fed institutions, and deeply believing in their own or other institutions not fed by the State! Why should they be taxed out of their millions for private enterprises they do not like?

So great is the rivalry of the hospitals for this state "graft" that according to the poorly hidden mathematics of one, by simply dividing the total number of night patients by the total number of cots, it comes out that on the average over two patients slept on every single cot every night of the year! Is there anyone who does not know that the statistics of the annual reports of dispensaries and hospitals are often a mass of lies? Even after the theft of many millions to build our *sine-Quay-non* State Capital, the ringsters will find money to reward their obedient servants.

Against this orgy of unconstitutional rottenness only one legislator—thank God there was one—dared to raise his voice in

protest. On May 3 of last year Representative Reynolds said: "Many of the bills we have passed are ridiculous. It is in the matter of giving away state money for hospitals and other semi-private institutions that this extravagance reaches its climax. The time ought to be here when a sick woman, a room, a donated blanket and the services of a doctor are no longer the nucleus of a hospital. Yet with only this outfit you can call the establishment a hospital and come asking state aid and get it. I tell you frankly that I am ashamed of some of the bills I have introduced here to get public money, and the only excuse is that others do it. We are sowing the seeds of scandal, and I predict that unless this lavish throwing away of state funds is stopped, and that very soon, there will be added to the history of Pennsylvania a chapter darker than that which marked the corruption when the State was being looted for railroad-building enterprises."

I know of but one physician who has dared to speak against the infamy as Mr. Reynolds has done.

The modern hospital is frequently in fact not unlike an illegitimate foundling; the endower thinks he has done his entire parental duty in putting a bag of money in the child's basket and, paying no further attention to it, leaving it for the lady patronesses, wet-nurses, artificial foods, incubators, and medical men to bring up. Of course the "charity" hastens to become very selfish and cunning, and the treatment—oh, the treatment!

The man whom the American profession seems most to honor—probably because he shows his opinion of it by deserting it—does not believe in treatment, at least any that can cure; he never cured or cared to cure a patient of disease; he amused himself and patients suffering with gallstones and with astigmatism and floating kidney, by treating them with wet-packs, learned lectures, and more learned textbooks; denied at first and until impolitic that the stegomyia had anything to do with yellow-fever—and so on! Of what use is the medical profession if there is no cure for any disease? Indeed, for a long time, now, the Medusa-head of therapeutic pessimism has been peeping

out from under the wig of anatomic pathology and medical atheism.

For a generation the surgeons have been sneering at everything but surgical disease; the pathologists have long ago settled it that there is really no functional disease, and that it is only our microscopes that are at fault when we can not discover the bug of senility, the lesion in foolishness or the tumor in megalomania. The gastrologists practically admit that the surgeons should get their patients after they have thoroughly pumped their stomachs and purses. But at last the neurologists have come into the open and have flung away their wigs. Snakes instead of hair are not pleasant to look upon! "Neurasthenia," it seems, has "passed," and with it hysteria—all the thousand forms of habitual peculiarities in many women and children. Such patients, one and all, are simply insane, and that's an end on't! What a world, when all but a few Americans will be in asylums commanded by the only sane men, the neurologists! And nobody curable! One-fourth or one-half of all the asylum inmates will have lateral spinal curvature, but the orthopedic surgeons will smile when you suggest that the etiology is known, and the prevention also. The superintendents of the thousands of epileptics will be "disappointed" if a possible cure or method of prevention is suggested. Forty per cent of all inmates will be enduring the agonies of migraine, but the moribund ophthalmologists will wink at the decadent neurologists, and tap their foreheads significantly as the refractionist passes by.

That the "leaders" do not make medical discoveries, that they never lead, but that they oppose medical progress and deny medical discoveries, is illustrated by the history of every step in professional progress; but chiefly by the history of vaccination. The great Royal Society, all of the official leaders of English medicine, opposed and fought Jenner when he labored to secure the establishing of the truth. But it now is clear that Jenner did not discover the immunizing power of cowpox, and that far from making the first scientific demonstration of cowpox inoc-

ulations, and of their power against subsequent smallpox inoculations, Jenner waited twenty-two years after the grand old farmer Benjamin Jesty had dared these things before he inoculated the Phipps boy. And the leaders of today laud Jenner as the discoverer of vaccination!

These leaders always make monuments for the men they themselves have first made martyrs. A national committee should be appointed to learn why we as a profession honor the living frauds, hypocrites, and bigots, and never the real discoverers until they are dead, and why we usually honor the great dead for the thing they did *not* do. The case of J. Marion Sims, martyred by the New York City medical leaders, shows that America has only dishonor for her greatest and best medical men. The leaders Hodge, Meigs, and Company, succeeded in silencing Holmes as to the contagiousness of puerperal septicemia, but did Hodge, Meigs, and Company ever acknowledge their crime? Men who are modest, who are not politicians and unprincipled schemers, can not, as a rule, secure medical fame and wealth for themselves or recognition of great new medical truths for their patients. Great universities are prostituting themselves by giving all sorts of honorary degrees, for purely selfish purposes, to men without any just claim to them. If you want to be an LL. D., don't do anything for the good of medicine or humanity! Be a cunning fraud!

Let me epitomize the illustrative history of one of my patients who fainted from exhaustion. He was a poor mechanic whom the scientific neurologist ordered to the surgical operator hungry for practice and with empty hospital wards and private rooms. Jumping out of his touring automobile the surgeon trephined big holes in the poor man's head but found nothing to justify the prearranged diagnosis of Jacksonian epilepsy; the neurologist and surgeon rendered dozens of bills, even for the nurses, and for the cot on which the man lay, and they got a thousand dollars from him; then turned him adrift uncured, with the insult "We have done our part, it is now up to you to get well."

Another patient of mine was told by a neurologist that she had "neurasthenia," and was sent to a sanitarium—and have you ever considered the wondrous growth of these hundreds of sanitariums? But a pair of glasses cured her in a day. The "science" of this neurologist teaches him that there is no such thing as a reflex in the human body, physiologic or pathologic.

Another patient was charged several hundreds of dollars by an ophthalmic surgeon for a little operation. The poor farmer had ten acres of land, which he sold to pay the surgeon his fee, and then he became a day workman and finally he and his family went to the dogs. A young lawyer without income or bank account was charged by a praying surgeon \$600.00 for an operation, and \$50.00 each for four assistants. The four assistants never saw a cent of the money. This great man has dozens of LL. D. degrees, presidencies and professorships and he advertises in all the newspapers!

Another illustration is this: A world-famed surgeon was to read a wonderful paper on a miraculous operation at the great medical association held in a distant city. The famous one had given copies of his paper to the daily newspapers of his city with his photograph, etc., to be reproduced the next morning after its reading before thousands of doctors in the far-away city. Something happened so that the reading of the article had to be postponed until the next day. At once the telegraph wires were heated with messages to postpone the newspaper publication for a day. It was too late, and so the newspapers had to say that they had just received a full account from their correspondent of the following marvelous discovery divulged to the scientists of X—the day before, in a paper, of course, not read. The fun was frightful—for the great professor's enemies! One of these, a great LL. D. and rival, got hold of the facts, wrote up a full account of the scandal and published it to the medical world. But, most cunningly, he published it anonymously. Today these two great rivals entertain each other with profound

bows and play into each other's hands just as if they didn't hate each other with adorable bitterness.

The end of the beautiful story is that the proposed miraculous operation was like the LL. D. proposer—a fraud. Not one of you could ever guess what it was. But the patients! Oh, *they never were considered*. A rich patient recently paid, in all, some \$20,000 to have removed, what one of the consultants told me was “as pretty a little healthy pink appendix as he had ever seen!”

Now, the men who do these things are they who make of medicine an avocation. But all good physicians feel it to be a calling, a vocation,

You men with a medical vocation, you who loathe these things I have described, outnumber the men who prostitute their profession a hundred to one, and yet by your negligence and even by your sins of commission you authorize and encourage the abuse. It lies with you whether these consultants are consulted or not. And whether you buy the medical journals and books they control and own and write!

This vogue and false reputation of the false leaders comes largely from your carelessness as to your medical-organization officers and cliques, your paying your money to misleading leaders and self-publishing publishers of journals and books. What possible excuse is there for the torrent of textbooks by professors and rivals on “Practice” and on every imaginable rehash of old or stolen medical knowledge which the egotism of authors and the cupidity of publishers pour forth? It is you who buy these thousands of useless books, most of them at double the price you should pay for them, even if they would do you good, and help you to cure your patients. Do you know how many of them are literally and absolutely stolen? I could point out to you books every line of which is stolen even to words, sentences, and surely as to ideas.

I have suffered atrociously from the thieves and know the facts. Whole articles and books and “systems” exist, not a page of

which was written, and often not read, by the men credited with the authorship. One recent pompous article in a big book on an immensely common nervous disease was old medieval stuff recooked by a penny-a-liner, and one sentence only, of hatred for a rival, was inserted by the "author." In these criminal "textbooks" and "systems" much of the best literature is not only not epitomized, it is not even mentioned. A hundred or a thousand articles and reports not suited to the authors' prejudices are as calmly ignored as if science and morality had no part in medical literature. Another illustration: A purse of \$10,000 was recently made up by the medical admirers of a great medical man, because of his supposed authorship of a great literary work. But this work was not done by the assumed author, who pocketed the \$10,000 of poor doctors, and then left the medical profession for good and all.

And of all the useless books in the world the most madly foolish are the many-volume composite "systems" which you buy, got up for the benefit, pecuniary and reputational, of the sinecure-hunting, popularity-mad, chief editor, next, by reflection, of that of the me-too departmental editors, but all surely for the sake of the rich lay publisher. A year or two ago the chief editor of the latest and worst of these composite systems told a friend of mine he would not write an article for less than \$10 an octavo page, and that any doctor is a fool who writes for less than that. He now secures a host of "fools" to write for him at the fool-rate, while he takes hundreds of dollars a page, and all the fame you will give him. In these systems you will find little to help you practise medicine. Their knowledge is largely the false knowledge of the past, in which practical therapeutics—your great concern—is ignored, and the old anatomic pathology, long since gone to seed, is reemphasized; while the pathology of the living, crippling, amazingly common functional diseases is utterly misstated and ignored. *Not* curing the millions with these functional diseases is the source of the incomes of these leaders.

In the latest and worst of these systems the international

editor-in-chief says that the best protection against quackery would be for every practitioner to have a laboratory in his office. Every quack in the land will grin with delight at that lie—grin from ear to ear! You who try to cure functional diseases and prevent organic ones know how the quacks are beating the leaders.

Did you ever think of the astonishing fact that the dead patient can not be made alive and healthy? That functional disease precedes and causes all organic disease? That the pseudopod preceded all anatomic pods? That your work is almost entirely with the functional ailments, the headaches, belly-aches, neurasthenias, dyspepsias, constipation, nervous disorders, -algias, and -itises, etc., of a thousand kinds born of physiology and hygiene gone slightly wrong? *Why the interest in the hopeless end products, and the textbook indifference to the curable functional disorders, which, neglected, end upon the postmortem table?* In the books and articles of the great editors and leaders you will find postmortemism apotheosized, and the conclusion of every page is that the end of all is either hysteria, or the surgical operation, or hopeless invalidism and death. Therapeutic nihilism is written over the gate, and the motto is, *Leave all hope behind ye who enter here.* The chief advocate of therapeutic nihilism is logically of great service to the Eddyites who quote his august authority when sued for allowing their children to die without medical service. A prominent medical journal, itself now happily postmortem, recently said editorially that every obscure gastric symptom demanded immediate gastrotomy of the patient.

And these official medical journals—what a farce they are! If any of you are troubled with insomnia or optimism you should subscribe for, say, *The British Medical Journal*. Such journals are carried on for the benefit of the select few who arrogate to themselves a knowledge which has been outlived, a science which is almost as hopeless as that of Mother Eddy, and an egotism which outdoes that of this wonderful lady. Try to get into the columns of these defenders of the faith an article

which advocates progressive advances in medicine, and see how you will be "turned down."

In our country just now the powers of a desirable organization of the American profession are being used for a most undesirable monopoly, for crushing out democratic spirit and independence, for extinguishing minorities and independent rival journals. Impertinence, bulimia of power, tradesunionism, are being fostered, and an insane howling about little evils is used to silence critics of infinitely greater ones. The worst abuse is being officially poured upon good drug manufacturers by men secretly in the secret-drug business, and who are carrying on far more degrading businesses than those derided. It is scarcely wise or logical to laud and support manufacturers who secretly put up thousands of private formulas, secret drugs, and "specialties" for the quacks, and then abuse the quacks for selling them. And especially if the quacks sell them to physicians!

With open eyes read the official address of President Bryant, before your own State Medical Society, and note the implication, and the between-the-line protests—protests hampered and modified by many and powerful necessities and limitations. When you have finished this reading get and read the later address at Atlantic City of the same president. It is the most amazing mass of bombastic fudge and ungrammatic mystification. It is plain that a reorganization of the reorganization is required.

If one looks at them discriminatingly, these big medical gatherings are pretty bad and more silly. The big nonleading leaders encourage them in order to show off; the me-toos imitate their leaders; science is made the excuse for a lot of crass advertising, and worse ethics.

What above all is needed is physicians who are not afraid of traditional prejudices and entrenched authorities, men who can not be intimidated either by their own ambitions and selfishness or by the tyranny of conservatism and medical politics, medical societies, organizations, or fashions; men who will

speak out and act as their own consciences demand upon all professional questions. It is plain that the profession is too much taking on the depraved habits of the worldlings about us, of the craze for luxury and success which has bitten the majority of Americans.

The practice of medicine is a holy calling, a vocation; the majority hold it so; the leaders, the few, make of it an avocation, the tool of "success." We must stop that sort of disgrace. The leaders have been practising medicine for success, or what is the same thing, for money. Now, the professional murderer, Orchard, has shown that for the sake of money alone he failed to be a successful murderer. Emotion and "soul" is necessary in any calling, even in Medicine, or even in Murdering. In view of the short life-length of our people, observing that for every premature death there are two years of sickness, seeing the 10,000 of our suicides, and the many thousands of the mangled and killed by our railroads, it grows to recognition that civilization is a ferocious cannibal, mad with luxury and greed, devouring the millions of unfortunates who do not "succeed." The only withstanding forces against this gluttony of death are religion and medicine. The physician who practises medicine merely as a means of getting on, for money, for fame, for selfishness, and success, is a traitor to his profession. As individuals the divine command may be obeyed, that we may really find out life by losing it. It is an old, hard-worn truth that diseases are the warnings of the broken laws of ethics and physiology.

There is no punishment for suicide when the man is dead. The old pathology ignored the functional causes of death and busied itself only with the crude instruments, the terminal diseases, with which the suiciding weakling killed himself. The present sicknesses of the profession are today in their functional and curable stages, but heroic therapeutics are needed to prevent the inevitable and incurable organic diseases. The rise of the social diseases called eddyism, osteopathy, and the

rest, show how far we have all gone. The luxuriant growth of crude quackery outside of the profession is the direct result of subtle quackery within it; and it is because we have not heeded the command, *Physician, heal thyself*, that we have become so infested with the parasites of unfaith-cure, bone-punching, and unchristian unscience.

Did it ever come to your mind that our long, great and valiant fight for medical registration, state boards of examination, four-year courses, for medical organization and dignity, has ended in utter failure? We are just where we began twenty years ago. Then the Sick Citizen had a choice between quacks and regular practitioners and the law could not be invoked to "protect the citizen from greed and ignorance." To bring about registration, etc., one large school of irregulars had to be taken into the legal fold. There was much nausea on the one side, much jubilation on the other. How is it now? The law now demands the legalization of osteopaths, and eddyites, and Albany (not Heaven) only knows what other forms of Healers and healers.

"Progress," then, is steadily giving the former illegal and despised quack a legal and professional status. Isn't that an atrociously funny result of the generation-long demand for professional exclusiveness and registration? But only sillies can fail to see that it is leading to the right of the citizen to choose his doctor, or his quack, or his murderer, as he pleases. And nothing in earth or heaven can prevent this democracy.

There are so many quacks within the profession that a sick man must choose carefully if he sticks to the regulars. The law has validated the larger choice, and tradesunionism in our ranks has killed our own courage to withstand the demand for the legalization of quackery. Riotous individualism, whether good or bad, is simply a fact! So the science of the textbooks, of the "leaders," and of the laboratory can help us little when it comes to the morbidities of our professional life, and of our patients.

We find in our extremity that professionalism, the new form of deism called LL. D.-ism, can not help us, and that the patient is always an individual; his disease, unlike that of any other, and the turgid and glittering rhetoric of the self-advertising parade-writers is not helpful to us. The modest, dutiful general practitioner, especially of the smaller cities, towns and country, is likely to stand in awe of the famous city authority with sesquipedalian verbiage and titles. Professional enlightenment and progress needs that the general practitioner shall rid himself of that awe and shall demand back from the specialists the clothes of which he has been robbed—not only his cloak, but his coat, his waistcoat also, and trousers, possibly, which have gone citywards in too reckless haste. The general or family physician is still in the majority, and he is the backbone of the profession, and the hope of curing our pitiful professional scoliosis rests with this true orthopedist.

The entire ten commandments of the professional decalog are daily smashed to smithereens by the professors and LL. D.'s, and there is little to be expected for the dignity of our vocation except in the native vigor of mind and honesty of heart of the family physician. Abolish most specialism! Live to your ideals and cure your individual patient in your individual way of his individual disease. And of all unholy stupidities do not believe there is no cure. *The cure and the prevention of disease, of most all the diseases which curse our world, is possible. Perhaps not by the methods you suspect or have tried, but still, really, by some method.*

There are two ways of committing professional suicide: The first by therapeutic pessimism, the method of the old pathology, the degraded neurology, the criminal old surgery, and the unspeakable old ophthalmology; and these have almost brought medicine to death, have resulted in a state of mind in the community in which millions of people only wish to learn what the medical profession hates in order that they may love it. Your "leaders" are murdering your profession. If you believe no

disease preventable and curable, for man's sake get out of medicine and go into the gambling, bucket-shop or politician's business. The second method is actually to prevent and incidentally to cure disease so that sickness will disappear. This last is the physician's way to find his life by losing it, and is a glorious way of living and dying. The causes of the diseases which produce the larger part of the sickness, misery, poverty, crime, and early death of the world are now known. But the self-made, and self-elected, leaders of the profession know nothing of these causes and hate with bitter hatred those who do know these causes, and who know that most all diseases are preventable and curable. "Distrust your leaders" is the beginning of medical wisdom. Decide for yourself, disabuse your minds of prejudices, and "laws," and "rules," and individualize every case of disease you have. Never generalize, as the poor "scientist" does, but study each single case as if no other existed.

Over all and above all, cling to the ideal of your profession being a calling, a vocation, from a source higher than the love of success and fame and money. Cling to the idealism and religious purity of your youth, to the love of your suffering fellowmen which lingers in the silent depths of your soul as all that makes your soul valuable and breeds its immortality. If you do not love your patients you will not cure them. Sympathy and kindness is the condition of therapeutics. These professors and ambitious self-seekers are mostly either hypocritical or outspoken atheists. There is no god that will authorize diabolism in the name of medicine or humanity. So these scamps who practise medicine for themselves rather than their patients must get rid of gods and God. If the love of God and the belief in Him has gone out of your heart, the love of your fellows and pity for their lot will swiftly follow. Without religion, without compassion, there is no abiding medical knowledge, no lasting art of healing. Most of these neurologists with their sneer of "hysteria," when they can not cure, and

of "neurasthenia," when they do not know, most of these laboratory and ultrascientific men, are materialists; they have no ideals, and real self-sacrifice is to them impossible; most of these alienists who sell their psychiatry for an advocate's fee, most of these surgeons who would operate even for "operation *per se*"—plus a big fee—a majority of these leaders are materialists whose souls or psyches deny psychic things in their patients; their real failure is as certain as that physical disease springs usually from psychic causes. These pseudo-professional men are living on the inherited virtues or soul-wealth of their genuinely professional ancestors. Every act and desire of their life is cunningly selfish instead of openly benevolent. The most depraved physician I ever knew did the most praying and gave the most money in supposed charity.

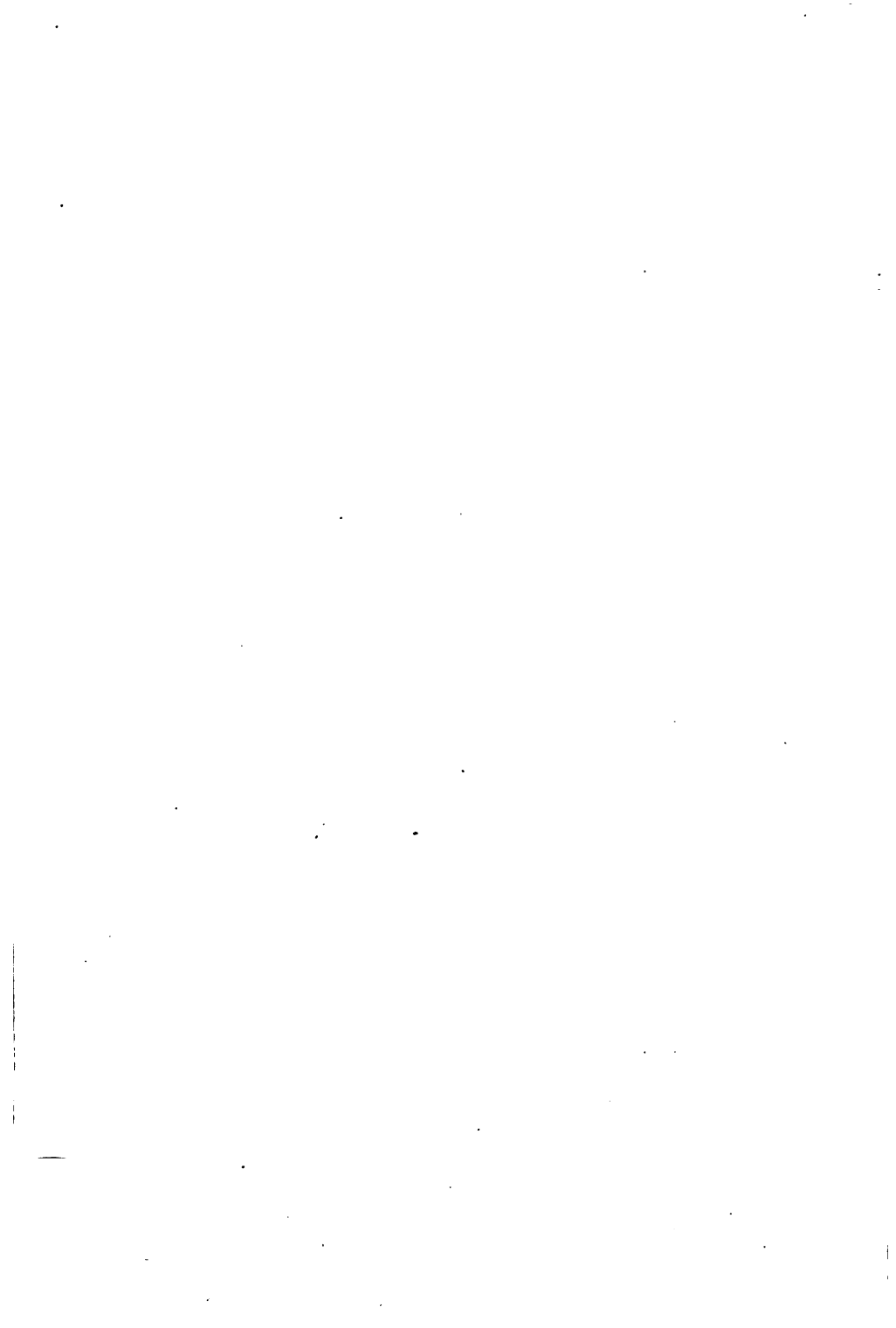
Some seven hundred years ago a nonchristian physician was also a prayerful, but genuinely religious man. His heart and mind were fervent with love of his brother-men, and with compassion for their physical woes. He was also most zealous in science, eager to unlearn his errors, watchful for new truth, earnest in wishing to add to the vast body of impersonal objective truth called Science—Science which shall finally, Science which alone can heal the mighty patient, Humanity, of its ills. Hallowed by the impassioned spirit of Holy Medicine, this noble physician thus invoked his God, our God, and the God of true Science:

"Thy Eternal Providence," said Maimonides, *"has appointed me to watch over the life and health of Thy Creatures. May the love for my art actuate me at all times; may neither avarice, nor miserliness, nor the thirst for glory, or for a great reputation engage my mind; for the enemies of Truth and Philanthropy could easily deceive me and make me forgetful of my lofty aim of doing good to Thy children. May I never see in the patient anything else but a fellow-creature in pain. Grant me strength, time, and opportunity always to correct what I have acquired, always to extend its domain; for knowledge is immense and the*

spirit of man can extend infinitely to enrich itself daily with new requirements. Today he can discover his errors of yesterday, and tomorrow he may obtain new light on what he thinks himself sure of today. O God, Thou hast appointed me to watch over the life and death of Thy creatures; here I am ready for my vocation."







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